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US Army Corps of Engineers
New Orleans District

ARCHEOLOGICAL AND HISTORICAL RESEARCH ON AVOCA PLANTATION: TESTING OF SITE 16 SMY 130 AND SURVEY OF PROPOSED BORROW AREAS FOR EABPL ITEM E-96, ST. MARY PARISH, LOUISIANA

Final Report

September 1988

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Prepared for

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The results of archeological surveys of two proposed borrow areas and testing of site 16 SMY 130 within a proposed levee right-of-way are presented. The initial borrow area survey failed to locate cultural resources. Survey of an alternate borrow area located five historic artifact scatters which appear to be associated with early twentieth century workers' quarters located on Avoca Plantation. Test excavations at 16 SMY 130 encountered intact prehistoric and historic remains. The prehistoric material is primarily related to a

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Mississippi period occupation, but evidence of earlier occupations is also present. The historic remains include features associated with middle nineteenth through early twentieth century workers' quarters and service buildings on Avoca Plantation. The history of the plantation is summarized. Site 16 SMY 130, here defined to include the entire Avoca Plantation building complex, is argued to be eligible for nomination to the National Register of Historic Places.

DEPARTMENT OF THE ARMY
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REPLY TO
ATTENTION OF

May 18, 1988

Planning Division
Environmental Analysis Branch

To the Reader:

This cultural resources effort was designed, funded, and guided by the U.S. Army Corps of Engineers, New Orleans District as part of our cultural resources management program. The effort documented in this report was an archeological assessment of site 16SMY130 and a survey of potential borrow areas. The cultural resources study was performed in support of Levee Item E-96 of the Atchafalaya Basin Protection Levees project.

We concur with the Contractor's findings and recommendations. Therefore, no additional archeological work is planned. Due to the archeological sensitivity of the project area, we will implement an avoidance plan during the construction period. The plan will include a no work area around the historic gravesites on the protected side of the levee, and continuous monitoring of construction by Corps inspectors with periodic monitoring by archeologists.

Howard R. Bush
Authorized Representative
of the Contracting Officer

Cletis R. Wagahoff
Chief, Planning Division

ACKNOWLEDGEMENTS

A number of people contributed to the present study. Foremost among these was Mr. George Picou, the property manager for Avoca, Inc. Mr. Picou provided assistance on a number of occasions during the fieldwork and shared with us his wealth of knowledge concerning the history of Avoca Island. Mrs. Catherine Dillsaver and Mrs. Cindy Thibodaux of the Morgan City Archives offered invaluable assistance during the historical research. The staff of the Special Collections Division of the Louisiana State University Library are also to be thanked in this regard. Mr. Michael Stout of the U.S. Army Corps of Engineers, New Orleans District, served as the Technical Representative on this delivery order and provided assistance with the research on a number of occasions. The fieldwork was conducted by the author, Richard Weinstein, Bill Flores, Ginger Spielmann, and David Willis. Mr. Marshall Mayon of Morgan City performed the tractor work. George Castille, Richard Weinstein, Ginger Spielmann and Bill Flores all aided with the artifact analyses. Angie Rincon provided assistance with the statistics program and Linda Abadie typed the report. The author assumes responsibility for any errors in the report.

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CHAPTER 1: INTRODUCTION

This report presents the results of an archeological survey and testing program conducted in support of the proposed enlargement of East Atchafalaya Basin Protection Levee (EABPL) Item E-96, St. Mary Parish, Louisiana. The research was conducted by Coastal Environments, Inc. under contract DACW29-86-D-0092 with the U.S. Army Corps of Engineers, New Orleans District. The proposed construction was to involve upgrading the existing levee through a combination of straddle enlargement, floodwall construction, and setback enlargement. In addition, a borrow area would be required to provide fill for the enlargement.

Initially, two study areas were to be examined during the investigations (Figure 1). One consisted of a portion of the levee right-of-way which contained a previously recorded archeological site, 16 SMY 130. This area extended 548.6 m (1800 ft) along the levee and varied in width from ca. 30.5 m (100 ft) to 121.9 m (400 ft). The second study area was the proposed borrow pit, located about 5.5 km (3.4 mi) east-southeast of the levee right-of-way. The borrow area was rectangular in shape and encompassed 10.2 ha (25.2 ac).

The study was conducted in several phases. The first consisted of documentary research on the history of land ownership and use within the areas and was carried out largely during December 1986. The second phase involved an intensive survey of the borrow area. This was conducted by two project personnel during January 1987. The third phase consisted of a program of test excavations at site 16 SMY 130, which included mapping, controlled surface collection, systematic subsurface testing, magnetometer survey, and excavation of a 1 x 2 m test unit. This work was performed by a four-person crew during early February. Later in that month two persons returned to the site with a tractor and grader box in order to machine scrape a possible historic cemetery area. Analysis and report preparation continued into March when the draft report was submitted.

Subsequent to the completion of that report, changes that necessitated additional fieldwork were made in the project design. One involved the selection of an alternate borrow area. The new area was an irregularly shaped tract of 37.1 ha (91.5 ac) located ca. 100 m south of the levee right-of-way. This area was surveyed by a three-person crew during late September 1987. A second change involved the replacement of the floodwall portion of the proposed levee enlargement with floodside earthen enlargement. This would impact an area of site 16 SMY 130 which had previously been recommended for avoidance, necessitating additional test excavations there. These excavations, which included auger testing and backhoe trenches, were carried out by a three-person crew during early October. A supplement to the draft report presenting the results of that research was submitted in November.

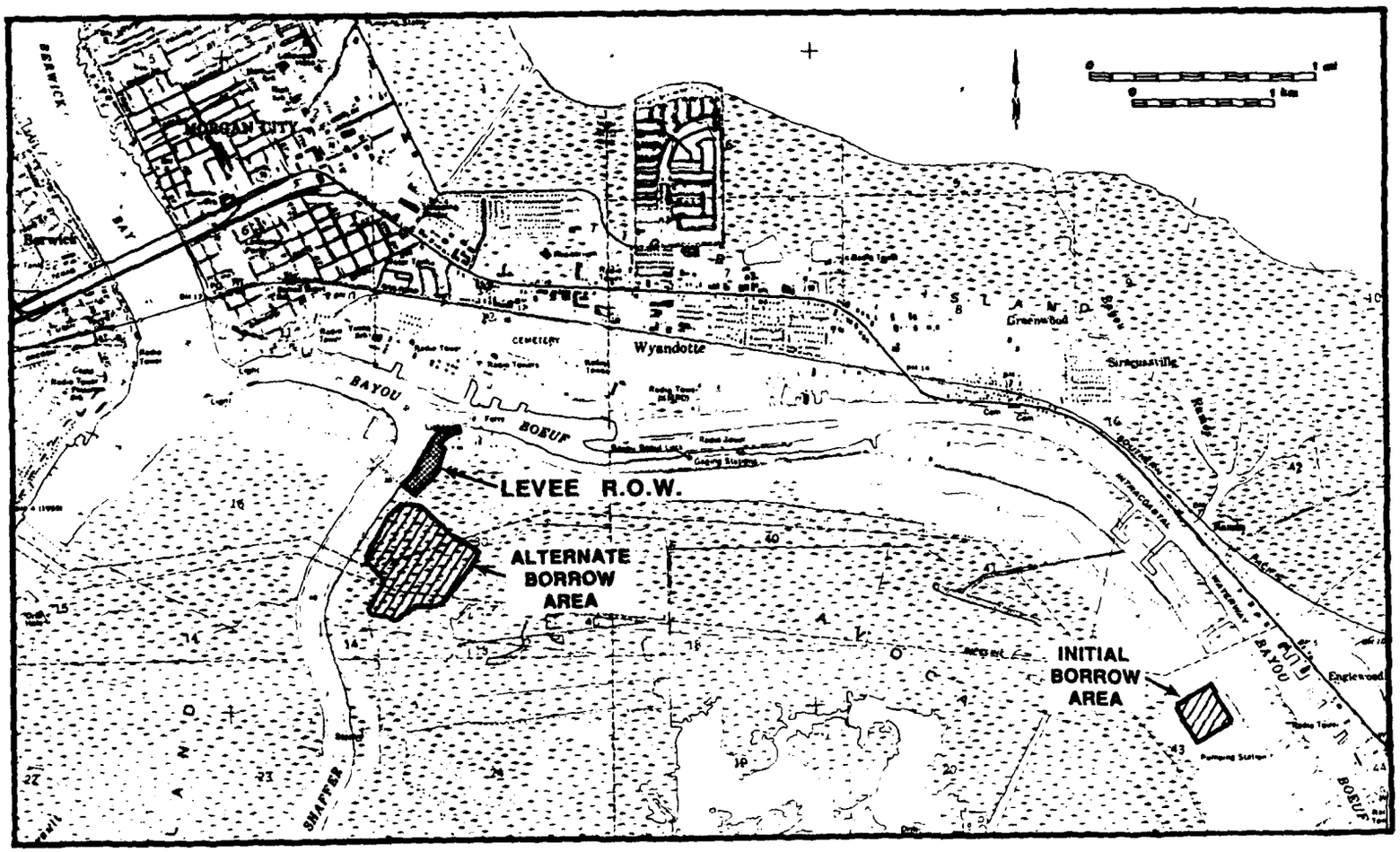

Figure 1. Map showing the location of the study areas.

CHAPTER 2: ENVIRONMENTAL SETTING

Geomorphic History

The study areas lie within the Mississippi River Deltaic Plain of southeastern Louisiana, a region whose Holocene geological history relates to a sequence of delta building and abandonment under a condition of continuing subsidence (Fisk 1952; Frazier 1967). The earliest episode of delta formation occurred between about 9,000 and 6500 years ago when sea level was 40 to 60 ft below its present elevation. This delta, known as the Maringouin, once extended 40 to 50 mi beyond the present shoreline, but with subsequent sea level rise it was transgressed and gradually eroded back (Figure 2). Much of the onshore remnant of the Maringouin Delta is now deeply buried beneath later deltaic deposits; however, Weinstein and Gagliano (1985:122) have suggested that a relict beach ridge partially exposed west of Lake Penchant may represent a reworked portion of the early delta. Other researchers have argued that this feature is associated with the next stage of delta building and is therefore substantially younger (Smith et al. 1986:64).

By about 5800 years ago sea level had risen to approximately its present level, and the Mississippi began prograding a new delta, known as the Teche, into the shallow Gulf. The trunk channel of this system, which has been reoccupied by Bayous Teche, Boeuf, L'Ourse, and Black, was located immediately north of the study areas. Its natural levees, composed of grayish brown silts and silty clays, have subsided somewhat, but are still extant as surface exposures 1/2 to 1 mi wide. Major distributaries of this system include Bayou Cocodrie, Bayou Piquant, Bayou Penchant, Carencro Bayou, and Little Horn Bayou, all of which trend southeast. Their natural levees are considerably smaller than that of the trunk channel, and in many places have completely subsided beneath the marsh.

While the age and extent of the Teche Delta are known in general terms, questions remain concerning the period during which it was active within the present study area and the location of its eastern limits. Smith et al. (1986:61-62) suggest that deposition in the vicinity of the present study areas occurred between 4500 and 3500 years ago, and that the easternmost deposits are found in the vicinity of Houma. Weinstein and Gagliano (1985:123) argue for a somewhat earlier period of activity, 5800 - 3900 B.P., and following previous researchers such as Russell (1940:1203) and Fisk (1944), place the eastern margin of the Teche Delta approximately 30 mi east of Houma. They identify several southwest trending distributaries, including Bayou du Large, Bayou Mauvais Bois and Small Bayou La Point, as having been initially formed by the Teche Delta. Smith and his coauthors (1986:64-67) assign these to a later episode of delta building.

About 4800 years ago the Mississippi River began shifting out of the Teche course and creating a new delta in the area of present-day New Orleans. Variously known as the Cocodrie (Fisk 1944), Metairie (Weinstein and Gagliano 1985), or an early stage of the St. Bernard Delta (Frazier 1967), it initially received only partial flow as a portion of the Mississippi's discharge continued down the Teche, building new distributaries now occupied by Bayous Sale and Cypremort. As the Mississippi's flow gradually shifted to the east, the Red River, which had intersected the Mississippi south of the Marksville Prairie, occupied the old Teche course and discharged directly into the Gulf through its distributaries. Several authors have commented on the narrow and relatively steep Red River natural levees which may be seen within the broad, gray levees of the Teche-Mississippi (Landreth in Newton 1985:111; Russell 1940:1205).

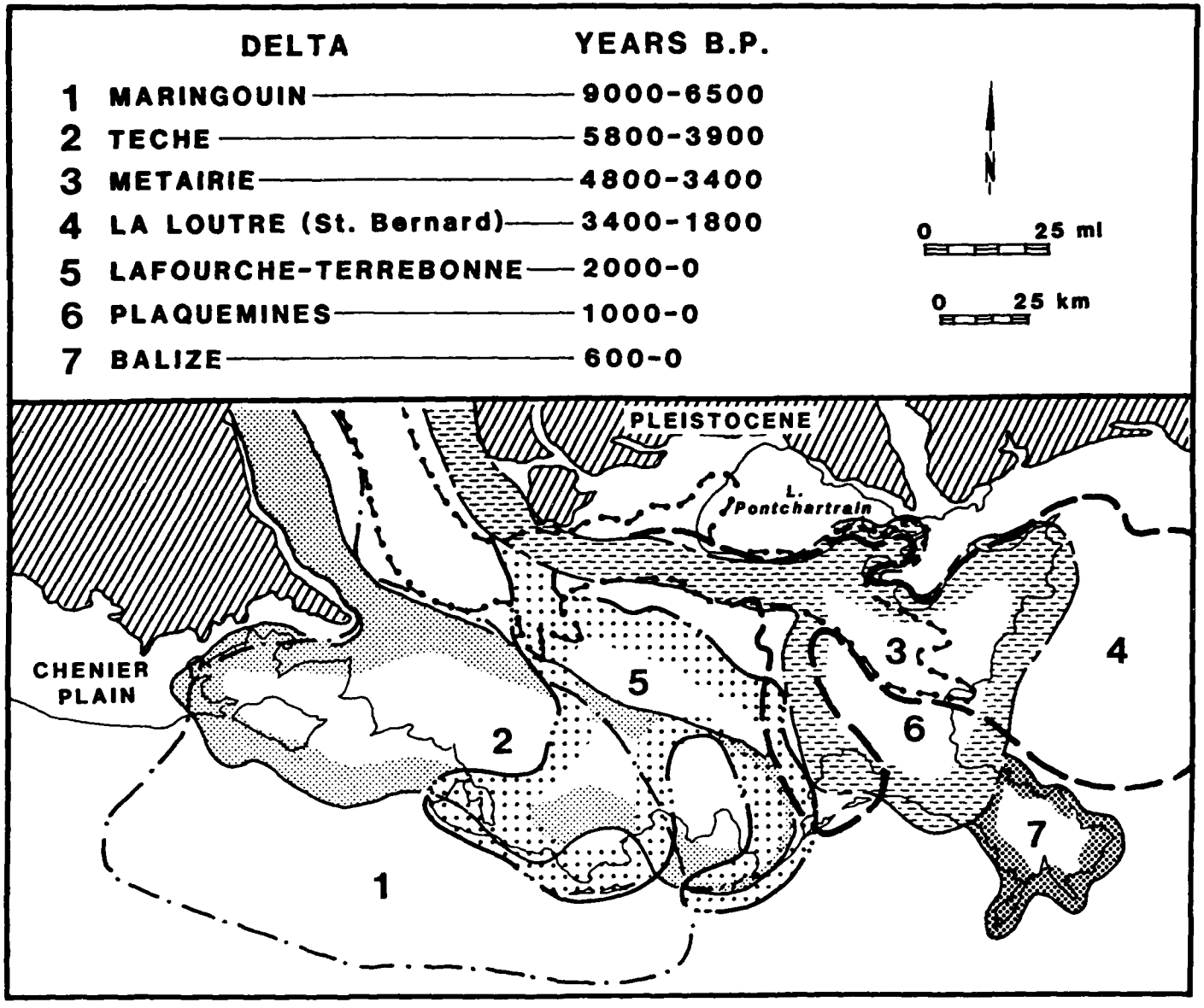

Figure 2. Mississippi River delta sequence over the past 9000 years (after Weinstein and Gagliano 1985:Fig. 1).

The duration of the Red's occupation of the Teche course is not well established at present. Russ (1975:163-166) suggests that the Red followed the Teche course only a short time after the Mississippi abandoned it. He argues that the Red then shifted into a new meander belt, occupied it for a time, and then abandoned it in favor of the Teche course once again. Unfortunately, Russ has no absolute dates for any of these events. Archaeological data from two widely separated localities bear on this problem. One of the localities is the Gibson site (16 TR 5), located within the present study area. McIntire (1958:63-64) took several cores from the site and encountered a Marksville-age shell midden intermixed with reddish silts which he interpreted as Red River deposits. Based on these findings, McIntire suggested that the Red was still occupying the Teche course at the time that the midden was deposited (ca. A.D. 1-400). The other piece of archaeological evidence comes from the modern Red River meander belt through Moncla Gap. Previous researchers have generally placed the age of this meander belt at less than 1,000 years (Fisk 1944; Saucier 1974:Fig. 3), but Pearson (1986) has recently noted that the apparent association of several early Marksville sites with this feature argues for a considerably earlier date of establishment, on the order of A.D. 1-200. Thus two sets of archaeological data suggest that the Red River abandoned the Teche course about 1800 to 1900 years ago.

While the Red River continued to occupy the Teche course, the Mississippi began diverting out of the St. Bernard Delta and gradually shifted its flow down Bayou Lafourche. The Lafourche system reached its peak flow about 1,500 years ago, creating new delta lobes east of the present study areas and reoccupying old Teche distributaries such as Bayou Black, Bayou L'Ourse, and Bayou Boeuf. Frazier (1967:300) and Smith, Dunbar and Britsch (1986:64-66) have argued that the courses presently occupied by Bayou Shaffer and the Lower Atchafalaya River were formed when flow in the Lafourche-Mississippi caused the Red River to back up in the old Teche trunk channel, eventually leading to crevassing and the creation of the two distributaries.

About 1,000 years ago the Mississippi River again began shifting its course to the eastern portion of the deltaic plain and building the Plaquemines Delta. A small amount of flow continued down the Lafourche system, but this was probably not responsible for any significant land formation in the vicinity of the present study areas. This diminished flow continued until 1904 when the source of Bayou Lafourche was artificially closed. After about 1,000 B.P. subsidence and marine transgression became the dominant processes within this area. Only within the last 100 years, since the Mississippi's diversion of a portion of its flow down the Atchafalaya River, has sedimentation begun to occur in the vicinity of the study areas.

Local Geomorphic Setting

The near-surface sediments within the present study areas consist predominantly of natural levee deposits associated with the trunk channel of the Teche-Mississippi, now occupied by Bayou Boeuf, and the Lafourche-Mississippi distributary currently occupied by Bayou Shaffer (Smith et al. 1986:Plate 35). In the northern portion of the levee right-of-way, the natural levee deposits overlie abandoned channel deposits, suggesting that in that area they postdate the Teche-Mississippi and are related to the Red River or the Lafourche-Mississippi.

The soils which have formed on these deposits vary with respect to their position on the natural levee. Near its crest, within the levee right-of-way and the alternate borrow area, are found Baldwin silt loams and Baldwin silty clays (Lytle et al. 1959:Sheet 35). At a slightly lower elevation is an area of Sharkey and Alligator

clays. The latter soils are also found within the initial borrow area, which is situated on the backslope of the natural levee.

In the eastern portion of the alternate borrow area the natural levee has subsided completely, and the surface sediments consist of swamp and marsh days and mucky clays.

Vegetation

Prior to clearing for agriculture, the natural levees supported stands of live oak, Nuttall oak, water oak, hackberry, cottonwood, and sweetgum with an understory composed of wax myrtle, elderberry, ligustrum, palmetto and hawthorns (Coastal Environments, Inc. 1974:38). Cypress and water tupelo appeared on the lower slopes of the natural levees and increased in frequency toward the backswamps. The present vegetation of the two study areas reflects extensive recent human alteration. Within the levee right-of-way a streambank community of immature cottonwoods, hackberrys, sweetgums, and oaks is located along Bayou Shaffer. East of the present levee there is a mixture of large live oaks and secondary growth which has reclaimed areas formerly cleared. The initial borrow area supports an immature bottomland hardwood forest in its southern half and a formerly cultivated field in its northern portion. In the alternate borrow area a bottomland hardwood covers the exposed portion of the natural levee, but east of there is a thin fringe of cypress swamp and beyond that a freshwater marsh.

CHAPTER 3: PREVIOUS ARCHEOLOGICAL RESEARCH AND REGIONAL CULTURE HISTORY

The following summary of archeological research and culture history in the east-central portion of coastal Louisiana provides a background against which the cultural resources of the present study areas may be examined. Previous discussions of the archeology of this region have appeared in works by Gibson (1978b, 1979), Goodwin et al. (1985), and Weinstein et al. (1978).

Previous Investigations

Early references to archeological sites in this region appeared in the journals of John Landreth (Newton 1985) and James Leander Cathcart (Prichard et al. 1945) who in 1819 travelled through the area locating stands of live oak and cedar for the U.S. Navy. Despite this early interest, the first professional investigation did not take place until 1926 and was extremely limited in scope. In that year Henry Collins of the U.S. National Museum spent 10 days examining sites in Terrebonne and St. Mary parishes (Collins 1927). A span of roughly 30 years elapsed before the next study, and extensive survey of the Mississippi River Deltaic Plain by William McIntire (1958), was conducted. McIntire, a geographer, examined a number of prehistoric sites in St. Mary and Terrebonne Parishes and used the chronological data provided by the artifacts to aid in dating the regional deltaic sequence. His research provided the basis for the current understanding of regional culture history, and still represents one of the most important investigations undertaken there.

Following McIntire's study archeological research in the region lapsed until the beginning of federally mandated cultural resources investigations in the 1970s. One of the first such investigations in the vicinity of the present study areas was a reconnaissance survey of proposed dredging areas along Bayous Boeuf, Black, and Chene (Byrd 1972). Seven sites, including two located on the eastern end of Avoca Island (16 SMY 20 and 16 SMY 44), were briefly examined at that time. The next research in this area was an extensive survey of the Gulf Intracoastal Waterway by Coastal Environments, Inc. (Gagliano et al. 1975). That study located six new sites on Avoca Island, including the Bayou Shaffer site, 16 SMY 130, which was tested during the present investigation. The latter site was described as "a 2-in to 3-in lens just below the surface and extending along the bank for about 150 ft. One major concentration of shell is about 10 ft long and is just above the waterline" (Gagliano et al. 1975:137). Prehistoric and historic artifacts and faunal remains were recovered at that time, and the site was suggested to be of moderate importance.

In 1978, three major reports appeared on archeological research within the region. The most relevant to the present study was a survey of proposed channel enlargement areas along bayous Chene, Shaffer, and Boeuf and the Atchafalaya River carried out by archaeologists from the University of Southwestern Louisiana (Gibson 1978b). Forty-three sites were either discovered or revisited, including 16 SMY 130, which was renamed Brick. Gibson (1978b:169) reported the site's size as 320 m by 100 m, substantially larger than that noted previously, but he was unable to locate intact deposits there.

The other two studies completed in 1978 were a survey of the proposed relocation route of U.S. 90 conducted by Coastal Environments, Inc. (Weinstein et al. 1978) and a site testing program carried out by New World Research, Inc. in relation to proposed sewerage construction in Terrebonne and Lafourche Parishes (Altschul 1978). Both studies provided substantial new data on the prehistory of the region. Coastal

Environments' research produced the first radiocarbon dates from the region, while New World's investigations offered some interesting hypotheses concerning late prehistoric settlement patterns and population dynamics.

Also in 1978 Gibson (1978a) undertook a brief examination of the Shaffer Oak Ridge site (16 SMY 50), located directly across Bayou Shaffer from 16 SMY 130. The site was argued to be significant, and it was determined that the proposed construction would not impact it.

The next major study conducted in the region was a survey of the Atchafalaya Basin Protection Levees by the University of Southwestern Louisiana (Gibson 1982). Although no new sites were recorded in the vicinity of the present study areas, additional historical information was provided on 16 SMY 130 (Gibson 1982:581-582). More recently R. Christopher Goodwin and Associates, Inc. carried out a survey of the Morgan City and Vicinity Hurricane Protection Project area (Goodwin et al. 1985). The report on this investigation presents an excellent review of the history of the Morgan City area and provides important chronometric data from test excavations of a prehistoric site, Goat Island (16 SMY 1).

Regional Culture History

Figure 3 provides the latest chronological framework of the prehistory of the Louisiana coastal zone, based on Weinstein (1985). Since the earliest intact and accessible landforms within the study area are related to the Teche-Mississippi course and its distributaries (ca. 3800 to 1900 B.C.), the following discussion will begin with the earliest culture period which was in existence during that time: the Middle Archaic. It is recognized that earlier Paleo-Indian and Early Archaic components are known from the coastal zone (see, for instance, Coastal Environments, Inc. 1977; Gagliano 1967, 1970; Weinstein et al. 1979a), but these generally occur in areas where relict Pleistocene-age, Prairie Terrace features are being exposed by shoreline transgression or on uplifted salt-dome islands. Such features are deeply buried within the present study area and are not expected to be encountered in anything but relatively deep borings.

Middle Archaic Period, 5000-3000 B.C.

The Middle Archaic period is characterized by widespread regional differentiation of cultures, and a number of developments in ground stone technology. The latter includes grooved axes, atlatl weights and pendants, as well as more extensive use of grinding stones, which first appeared in the previous period. This period also roughly corresponds with the Hypsithermal Interval which brought increased warmth and aridity to areas bordering the Great Plains (Wood and McMillan 1976). The impact of this climatic shift on other portions of the Southeast is not well known at present. It may be that the intensive shellfish collecting evidenced at some riverine sites of this period represents a response to this change (Lewis and Lewis 1961:20). Stoltman (1978:714-715) has also suggested that plant collecting increased in importance during this time.

In coastal Louisiana, very little evidence of the Middle Archaic period has been recognized. What there is comes generally from the Florida Parishes north of Lake Pontchartrain and the Prairie Terrace of southwestern Louisiana. Three regional phases have been identified, Monte Sano, Amite River, and Banana Bayou, but all are somewhat removed from the area under consideration. Perhaps components of the Banana Bayou phase, named for a small conical mound situated on the flanks of Avery

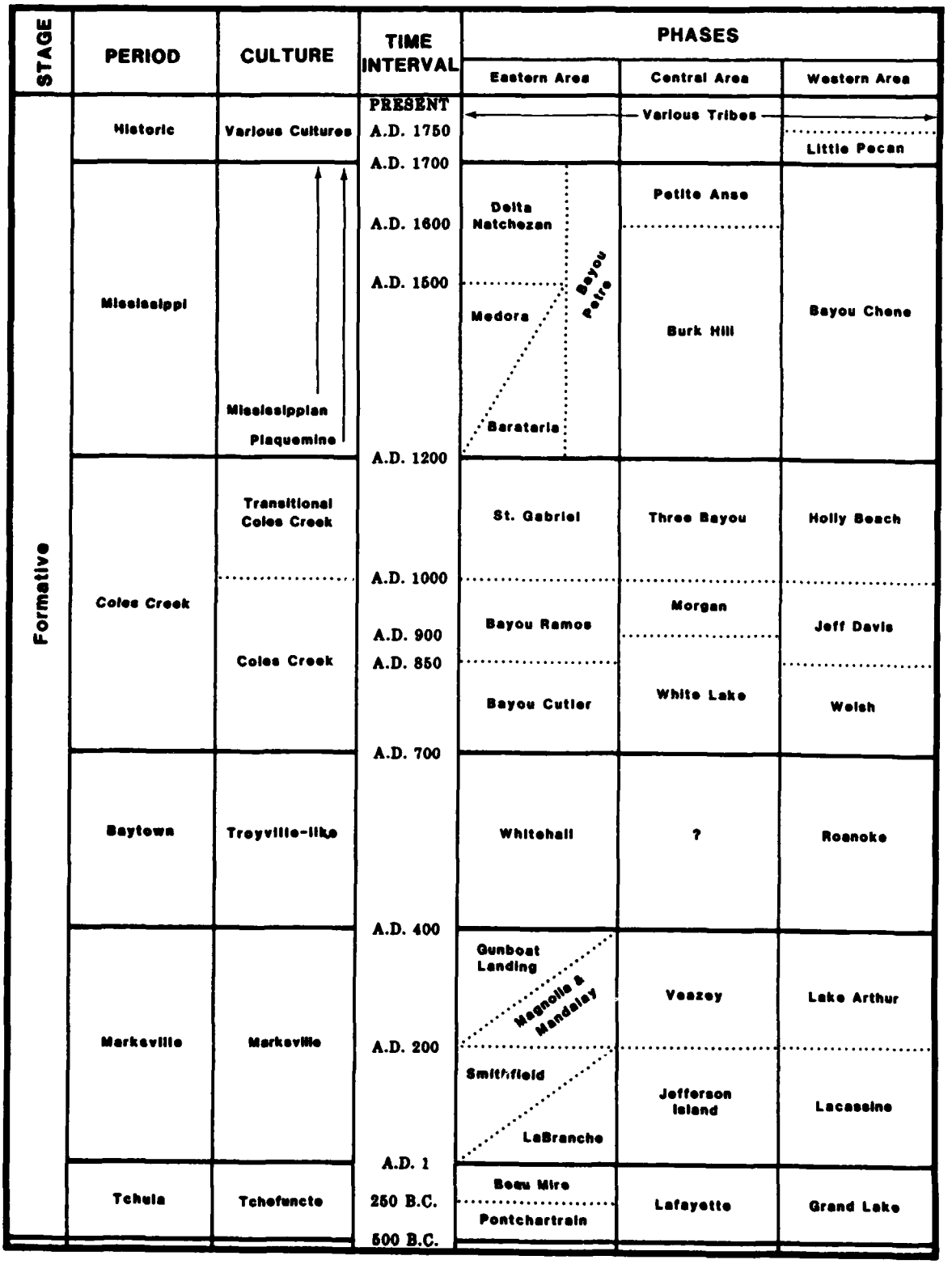

Figure 3. Cultural chronology of south Louisiana (after Weinstein 1985).

STAGE	PERIOD	CULTURE	TIME INTERVAL	PHASES		
				Eastern Area	Central Area	Western Area
			500 B.C.			
Archaic	Poverty Point	Poverty Point		Garcia	Beau Rivage	?
			1000 B.C.			
				Bayou Jasmine	Rabbit Island	
			1500 B.C.			
	Late Archaic	Archaic		Pearl River	Copell	Bayou Blue
			3000 B.C.			
	Middle Archaic			Monte Sano	Banana Bayou	?
				Amite River		
			5000 B.C.			
	Early Archaic			St. Helena	?	?
			6000 B.C.			
Lithic	Late Paleo	Paleo-Indian		Jones Creek	Vatican	Strohe
			8000 B.C.			
	Early Paleo			?	Avery Island	?
			10,000 B.C.			
	Pre-Projectile Point	?		?	?	?
			?			

Figure 3 concluded.

Island, and which produced material and radiocarbon dates suggestive of a transitional Middle to Late Archaic age (Gagliano 1967; Brown and Lambert-Brown 1978), will eventually be found in the area. Artifacts recovered from the primary mound at Banana Bayou included Williams and Pontchartrain points, crude bifaces, lithic debitage, and a relatively large percentage of amorphous baked clay objects. (Brown and Lambert-Brown 1978:Table 5).

Closer to the present region, and of immediate importance to the Teche-Mississippi course, is the location of site 16 IB 101 on the edge of the Prairie Terrace overlooking the Teche channel just south of New Iberia. This site reportedly has a Middle Archaic component (Coastal Environments, Inc. 1977:3:Pls. 4-5) and may represent an elevated habitation locale associated with the active Teche-Mississippi.

Late Archaic Period, 3000-1500 B.C.

Research elsewhere in eastern North America suggests that the Late Archaic period was a time of marked population increases and the beginning of extensive trade networks. The evidence for the former is seen in the appearance of large habitation sites such as Indian Knoll, Kentucky (Webb 1946), while the latter is reflected in the exotic raw materials which occur at some sites. Plant cultivation involving a tropical domesticate, squash, and possibly native North American species also began during this period (Chomko and Crawford 1978).

In coastal Louisiana, three geographically separated phases have been identified, but only the Pearl River phase, based on material from the Cedarland site (22 HA 506) in Hancock County, Mississippi (Gagliano and Webb 1970), is relatively well known. Copell is based on excavations into an apparent preceramic cemetery on Pecan Island (Collins 1941), while Bayou Blue is named for material from a site in Allen Parish (Coastal Environments, Inc. 1977; Gagliano et al. 1982; Weinstein et al. 1977, 1979). Typical diagnostic artifacts include Evans, Ensor, Gary, Maçon, Palmillas, and Pontchartrain point types (Gagliano and Webb 1970; Gibson 1976), along with ground-stone implements such as winged atlatl weights, and tubular pipes (Gagliano and Webb 1970:Table 3).

Gibson (1976) has noted several apparent Late Archaic assemblages from the Prairie Terrace surface around Lafayette, while Weinstein et al. (1979) recorded similar sites near Opelousas. Of particular importance to the present study are several Late Archaic sites that apparently are directly associated with Teche-Mississippi natural levees (Gagliano et al. 1978). These are sites 16 SL 16 and 19, reported by Neuman and Servello (1976:24) in the Holocene floodplain east of Opelousas. Their presence is almost certainly related to the Teche channel after the Mississippi had abandoned the course. The fact that such sites exist on the Teche-Mississippi natural levees to the north of the present study areas implies that similar sites could occur in the present region.

Poverty Point Period, 1500-500 B.C.

In much of eastern North America this time interval witnessed a transition from Archaic hunting and gathering cultures to Woodland cultures characterized by food production, pottery manufacture, and mound building (Stoltman 1978:715-717). Current interpretations suggest that these three features have different and possibly unrelated origins. As noted above, tropical domesticates had reached the East prior to 2000 B.C., and there is good evidence of cultivation of native seed plants in the Kentucky and Ohio area by 1000 B.C. (Struever and Vickery 1973). Ceramics probably

appeared somewhat earlier than this in the third millennium B.C. along the Atlantic Coast (Stoltman 1978:715), and mound building may have developed independently in several areas by 1000 B.C.

In the Lower Mississippi Valley, this transition is marked by the development of the distinctive Poverty Point culture. Among the material characteristics of this culture are baked clay balls or Poverty Point objects, microlith and lapidary industries, and earthworks (Webb 1977). Pottery is not abundant, but fiber tempered and sand tempered wares have been found at several sites. Subsistence data are, in general, few, but they suggest a continuation of an Archaic pattern of intensive collecting of wild plants and animals. It should be noted, however, that there is mounting evidence for the cultivation of a tropical domesticate, squash, at Poverty Point sites (Shea 1978; Jackson 1986).

As with the previous culture periods, several Poverty Point period phases have been established for south Louisiana, but their recognized ranges are either too far east or west to include the present region. Nevertheless, Poverty Point components have been reported at a number of sites relatively near the study areas, and it is likely that ties to either the Rabbit Island (Phillips 1970:875) or Beau Rivage (Gibson 1974a, 1974b, 1976) phases will be found. In fact, the Rabbit Island site itself (16 SMY 8) is located only about 30 km west of the mouth of the Atchafalaya River, at the distal end of the Bayou Sale distributary, a channel emanating from either the Maringouin-or Teche-Mississippi course (Smith et al. 1986:Pl. 38; Weinstein and Gagliano 1985:123). Other sites with Poverty Point components include Cargill Canal (16 SMY 102) located at the edge of the Belle Isle salt dome (Brown et al. 1979:36-40; Weinstein 1984:11-13; Veatch 1899:299), 16 SMY 32 (Coastal Environments, Inc. 1977:3:Pls. 4-5), a locale possibly associated with a Teche-Mississippi distributary (Smith et al. 1986:Pl. 39), and 16 TR 212, a recently recorded buried site which may also be associated with a Teche-Mississippi distributary.

Tchula Period, 500 B.C.-A.D. 1

This period in the Lower Mississippi Valley is characterized by the integration of food production, pottery manufacture, and mound building into a single cultural system. In the southern portion of the valley these developments take place in an archaeological culture called Tchefuncte. Originally defined in southern Louisiana (Ford and Quimby 1945), Tchefuncte culture is now recognized to extend as far north as the vicinity of Clarksdale, Mississippi, and as far west as northeast Texas. The diagnostic artifacts of this and most of the succeeding prehistoric cultures of the Lower Mississippi Valley are the distinctive ceramics. Tchefuncte pottery is characterized by a laminated paste which appears to lack tempering. Replication studies suggest that the laminated texture is simply the result of minimal preparation of the raw material (Gertjejansen 1982), an expected feature of an incipient ceramic technology. Other diagnostic attributes of Tchefuncte ceramics include the use of podal supports and decorative techniques such as jab-and-drag incising.

The evidence for food production in Tchefuncte culture presently comes from one site, Morton Shell Mound (16 IB 3), where remains of two tropical cultigens—squash and bottle gourd, and one possible native cultigen, knotweed—were recovered (Byrd and Neuman 1978:11-13). Given the limited nature of these findings, the importance of cultivation in relation to the remainder of the subsistence base is still uncertain. Mound construction, now well documented for the preceding Late Archaic and Poverty Point periods, is surprisingly not clearly associated with Tchefuncte culture. Alan Toth (1977:61-65) has recently reviewed the evidence for Tchefuncte burial mounds

and suggested that they are the result of diffusion of certain aspects of Marksville burial practices among a few late Tchefuncte groups. Further research is required to verify this hypothesis.

Again, no specific phase of Tchefuncte culture has been defined for the present region, but recent surveys have recorded two Tchefuncte components at 16 TR 211 and 16 TR 212. The sites are both deeply buried and apparently associated with subsided distributaries of the Teche-Mississippi system.

The fact that Tchefuncte sites of the Lafayette phase or a similar entity might occur within the present region would be particularly interesting since the Lafayette phase is the one relatively reliable case where conical burial mounds have been associated with the Tchefuncte culture (Gibson 1974a; Weinstein 1982). Gibson (1974a:85) suggests that the mounds served as communal burial locales for a dispersed population residing at small, seasonal base camps or semi-permanent villages.

Marksville Period, A.D. 1-A.D. 400

In many parts of eastern North America this period is marked by evidence of extensive interregional contact through a phenomenon labelled the Hopewell Interaction Sphere (Caldwell and Hall 1964). The focal points of this interaction sphere were societies in the Ohio and Illinois River valleys which acquired large quantities of exotic raw materials, including obsidian, copper, mica, shark's teeth, and marine shells, in exchange for specialized finished goods such as copper panpipes and ear spools (Stoltman 1978:721). Various theories have been offered to explain the nature of this interaction, some emphasizing socioreligious systems and others pointing to economic networks, but the problem remains unresolved. Within the Lower Mississippi Valley, the culture which participated in this interaction sphere is termed Marksville. Toth (1977:470-477) has argued that Marksville culture developed out of Tchefuncte as a result of intermittent contacts with cultures in the Illinois River valley area, but he only speculates on the nature of these contacts. He emphasizes that the evidence for Hopewellian interaction is largely limited to the Marksville mortuary system and aspects of ceramic decoration. Other cultural subsystems, such as subsistence and settlement pattern, may have changed very little. Economic data from Marksville sites are extremely limited, but information from contemporary occupations in the Midwest suggests a pattern of intensive collecting of wild plant foods and high density faunal resources, such as fish, supplemented by cultivation of native North American seed plants and a few tropical cultigens (Asch et al. 1979). Present evidence indicates that maize was either not present at this time or of only minor importance.

It is from the Marksville period that the first evidence of sites in the immediate vicinity of the study areas can be found (Altschul 1978; Gibson 1978b; McIntire 1958; Phillips 1970; Weinstein et al. 1978). Principal among these are the Gibson Mounds (16 TR 5) and Mandalay Plantation (16 TR 1). Mandalay Plantation was established by Phillips (1970) as the type site of the Mandalay phase. With the creation by Toth (1977) of the Jefferson Island phase as representative of the general area's early Marksville phase, Weinstein et al. (1978) reduced Mandalay to the late Marksville period. Presently, it is unclear where the actual Mandalay Plantation site would fall chronologically, since the pottery types presented by McIntire (1958:Pl. 13) do not allow for separation between early and late Marksville. At present, only a portion of the assemblage from the Gibson Mounds (Weinstein et al. 1978) can be unequivocally assigned to the early Marksville period. Similarly, although there are many mounds in the area, it is not presently possible to assign them to any but the very latest Coles Creek and Mississippi periods.

There do appear to be a number of late Marksville sites in the vicinity of the study areas. Many of these initially were identified by McIntire (1958:Pl. 5) as Troyville in age, but have been reassigned to the late Marksville period on the basis of revised ceramic analysis (Weinstein and Gagliano 1985:141-142, Fig. 7). Most of these are associated with the du Large, Marmande, and Mauvais Bois distributary channels, although four sites (16 TR 4, 47, 76, and 77) are located on the relict beach ridge near Lake Penchant (Weinstein and Gagliano 1985:Fig. 7). Some of the best evidence for a late Marksville component in the study area comes from Gibson's (1978b:Table 16) test pit into the Oak Chenier site (16 SMY 49) near the junction of bayous Chene and Penchant. The lower levels of the pit (35-75 cm) yielded decorated ceramics only of the late Marksville period: Marksville Incised, var. Yokena and Marksville Stamped, var. Manny. It is interesting to note, as well, that these levels produced a flexed, human burial (Gibson 1978b:129, Fig. 28).

Baytown Period, A.D. 400-A.D. 700

The period following the Hopewellian florescence has been characterized as a time of cultural decline throughout much of eastern North America (Griffin 1967:187). This is certainly implied in Phillip's (1970:901) statement that ceramic decoration was "at a remarkably low ebb" during this period in the Lower Mississippi Valley. Recently, however, a number of researchers have suggested that the apparent decline may not have been as pervasive as previously believed. In the Midwest, Braun (1977) and Styles (1981) have argued that this period, in contrast to earlier interpretations, was a time of population growth and increased regional social integration. Along the Florida Gulf coast an elaborate culture called Weeden Island developed during this time (Milanich and Fairbanks 1980:89-143). Even in the Lower Mississippi Valley, new data indicate that the Baytown period was marked by the appearance of two painted pottery complexes (Belmont and Williams 1981). The earlier complex, termed the Quafalorma horizon, developed during the Troyville subperiod and exhibited striking similarities to early Weeden Island ceramics. The later complex, called the Woodville horizon, characterized the Deasonville subperiod and was less elaborate. The remainder of the ceramic assemblage of Baytown culture consisted of a large quantity of Baytown Plain and smaller amounts of decorated types such as Mulberry Creek Cordmarked, Salomon Brushed, and Alligator Incised.

Changes were also occurring in the stone tool tradition during this period. Small arrow points began to replace dart points, reflecting a transition from the atlatl to the bow and arrow. Subsistence data from the Lower Mississippi Valley are limited for this period, but in the Midwest, Styles (1981) has identified a pattern of intensive, localized collecting of wild plant and animal resources supplemented by increased cultivation of both North America and tropical cultigens. Mound building continued in the Baytown period, and there are indications that a shift from a mortuary function to a building substructure began toward the end of this time (Rolingson 1982).

As in the remainder of south Louisiana, the Troyville-like culture found within the present region during Baytown times is poorly understood. To date, most sites yielding examples of painted pottery on a Baytown Plain paste have been assigned to this time frame. As can be seen by Figure 3, however, this leaves little room for fine-scale cultural differentiation, and the Whitehall phase, named for the Whitehall site (16 LV 19) on the Amite River (Phillips 1970; Weinstein 1974), is currently the sole phase representative for all of southeast and south-central Louisiana.

Despite these problems, strong Baytown period components have been identified in this area. Foremost of these is at the Gibson Mounds (16 TR 5) where Weinstein et al.

(1978:Tables 29-30, Fig. 63) reported a ceramic assemblage composed of Coles Creek Incised, var. Stoner, Larto Red, vars. Larto and Silver Creek, Mazique Incised, var. Bruly, Woodville Zoned Red, var. Woodville, French Fork lugs, and Evansville Punctated, var. Amite (Phillips' [1970] "six-mile treatment"). Several of the numerous varieties of French Fork Incised may also be part of this group.

In addition to the Gibson site, one other locale in this region deserves special mention. This is Richeu Field (16 TR 82), a low, pyramidal mound on the Teche-Mississippi natural levee about 1.5 mi (2.4 km) southwest of Gibson. There, Weinstein et al. (1978:Tables 38-39) recovered sherds of Larto Red, var. Larto, Evansville Punctated, var. Amite, and several rims of Baytown Plain, var. Troyville. It may be that Richeu Field served as a small hamlet associated with the more prominent village at Gibson.

Coles Creek Period, A.D. 700-A.D. 1200

Elsewhere in eastern North America this time interval corresponds to the latter portion of the Late Woodland period and the beginning of the Mississippi period. Within the Lower Mississippi Valley, a cultural florescence which shows a marked resemblance to Weeden Island culture of northwest Florida occurs during this period. The precise nature of the relationship of Coles Creek culture to Weeden Island is uncertain, but the similarities in ceramic decoration and community pattern are unmistakable. Both were characterized by the use of incised, stamped, and punctated pottery types in which the decorative zone is largely restricted to a band around the rim of the vessel, and by the construction of small platform mounds around plazas. The latter are generally interpreted as an indication of the development of stratified social systems during this period. These societies were apparently based on economies which included the cultivation of maize. Direct evidence for this is extremely limited in the Lower Mississippi Valley, but remains of corn have been recovered from Coles Creek contexts on the peripheries of the Poverty Point site (Shea 1978).

Coles Creek period sites are relatively common within the vicinity of the present study areas and can be related to one or more of three temporally sequential phases for the region: Bayou Cutler, Bayou Ramos, and St. Gabriel. While the Bayou Cutler phase (established by Phillips [1970], based on data from Kniffin [1936] and McIntire [1958]) and the St. Gabriel phase (set up by Brown [1985] on data supplied by Woodiel [1980]) are situated primarily east of the region, the Bayou Ramos phase is centered squarely within it. This phase was created by Weinstein et al. (1978) using data from two test pits at the Bayou Ramos I site (16 SMY 133) located at the junction of Bayou Ramos and Bayou Boeuf.

As with most other phase designations, it is the various ceramic types and varieties which serve to separate the Bayou Ramos phase from its earlier and later Coles Creek counterparts. Bayou Cutler components can be recognized by many of the classic Coles Creek ceramic types and varieties: Coles Creek Incised, vars. Coles Creek, and Athanasio; Mazique Incised, var. Mazique; Pontchartrain Creek Stamped, var. Pontchartrain; and French Fork Incised. Bayou Ramos components can be identified by sherds of Coles Creek Incised, var. Mott; Mazique Incised, var. Kings Point; Beldeau Incised, var. Beldeau; Avoyelles Punctated, var. Avoyelles; and Pontchartrain Check Stamped, var. Tiger Island. The St. Gabriel phase can be recognized by sherds of Coles Creek Incised, var. Hardy, Mazique Incised, var. Manchac, Evansville Punctated, var. Wilkinson, Harrison Bayou Incised, var. Harrison Bayou, and minor quantities of Plaquemine Brushed, var. Plaquemine (Brown 1985; Weinstein 1985).

The latter phase is represented in the region by two excavated sites, Thibodaux (16 AS 35) and Goat Island (16 SMY 1). At Thibodaux, Weinstein et al. (1978:34-55) excavated a stratified shell midden along Bayou Boeuf in which one of the lower strata produced Rangia shell that was dated to 975 ± 60 B.P.:A.D. 975. It contained sherds of Plaquemine Brushed, var. Plaquemine; Mazique Incised, var. Manchac; and Addis Plain, var. Addis. At Goat Island, Goodwin et al. (1985:108-110) received excellent St. Gabriel phase radiocarbon dates (840 ± 45 B.P.:A.D. 1110, 860 ± 130 B.P.:A.D. 1090, and 810 ± 80 B.P.:A.D. 1140) from a shell midden which produced only plain unidentified pottery.

Mississippi Period, A.D. 1200-A.D. 1700

The last prehistoric period in eastern North America witnessed the development of chiefdom-level societies based on intensive cultivation of maize, beans, and squash. Perhaps the most dynamic of these societies appeared in the Middle Mississippi Valley between A.D. 900 and A.D. 1050. Referred to as Mississippian culture, it was characterized by a shell-tempered ceramic industry and a settlement pattern including large mound centers and nucleated habitation sites which were often fortified (Stoltman 1978:725). During the first centuries of the second millennium A.D., this culture spread rapidly along the major river valleys of this portion of the continent. The nature of this expansion, either by movement of people or diffusion of ideas, is still debated, but by A.D. 1200 Mississippian culture was found as far south as northern Mississippi and as far east as Georgia.

In the Lower Mississippi Valley Mississippian culture encountered an indigenous non-Mississippian culture, and a hybridization of the two occurred. Phillips (1970) considered the resident culture to have been Plaquemine, an outgrowth of Coles Creek culture which began about A.D. 1000. He viewed the interaction between Mississippian and Plaquemine culture as resulting in gradual changes in the Plaquemine ceramic tradition and settlement pattern. Later in the period, after A.D. 1400, an actual intrusion of Mississippian groups displaced the resident Plaquemine groups. Recently, Brain (1978) has offered a somewhat different interpretation of this sequence of events. He argues that the Lower Mississippi Valley culture which experienced the initial Mississippian contact about A.D. 1200 was Coles Creek, and that the resulting hybridization produced Plaquemine culture. The remainder of the period saw a gradual increase in Mississippian influence, at least in the Yazoo Basin, until about A.D. 1400 when a full Mississippian cultural pattern was achieved in the Lake George phase (Brain 1978:362; Williams and Brain 1983). Brain's reinterpretation of the cultural sequence has resulted in a shift in the established chronologies. Phases such as Crippen Point and Preston, which were formerly considered Plaquemine culture manifestations of the early Mississippi period, are now placed late in the Coles Creek period and assigned to a transitional Coles Creek culture. The latter now persists until A.D. 1200 and includes a number of changes in ceramic technology which had previously been considered indicators of Plaquemine culture. If Brain is correct, then Plaquemine culture throughout the Lower Mississippi Valley should postdate A.D. 1200 and presumably appear at progressively later times at increasing distance from the Yazoo Basin.

While disagreeing somewhat on the origin of Plaquemine culture, all authorities concur that it exhibited numerous continuities with the preceding Coles Creek culture. Several of the Plaquemine ceramic types appear to be direct outgrowths of Coles Creek types. There are some changes, however, including the addition of small amounts of finely ground shell and other organic matter to the pottery and the extension of the decorative field to include the body of the vessel. Mound

construction continued on an even greater scale than in the previous period. The mounds became larger, there were more at each site, and there were more sites. Intensive agriculture is presumed to be the economic base on which this florescence was built, but there is presently little direct evidence of it in the Lower Mississippi Valley.

The coastal zone of Louisiana witnessed many of the same changes which were occurring in the rest of the Lower Mississippi Valley. Beginning about A.D. 1200 Plaquemine assemblages appeared throughout the coastal zone. This is especially evident at some of the large mound sites in the present region. Gibson (16 TR 5) contains a well-pronounced Plaquemine ceramic assemblage (Weinstein et al. 1978), and it is highly likely that the impressive Berwick Mounds, described by Cathcart (Prichard et al. 1945), represented a major Plaquemine center. Coupled with these are smaller, isolated mounds, possibly representing minor villages in the Plaquemine political system. Sites such as Fairview Plantation Mound (16 SMY 148) (Collins 1927; Weinstein et al. 1978), Marmande Plantation (16 TR 19) (Altschul 1978; McIntire 1958) and 16 TR 96 (Altschul 1978:205-206), are representative of this group within the present region. Similarly, numerous shell middens with Plaquemine components are known throughout the region (Altschul 1978; Gibson 1978b; McIntire 1958; Weinstein et al. 1978; Weinstein and Gagliano 1985) and probably served as seasonal collecting locales for the residents of the more permanent mound sites.

Three regional phases of early Plaquemine culture occur to the east, west, and north of the region (see Figure 3). The first of these is the Medora phase, established by Gagliano (1967) on the data supplied by Quimby (1951) from the WPA-era excavations at the Medora site in West Baton Rouge Parish. Medora is, in fact, the type site of the entire Plaquemine culture.

The second is the Barataria phase, proffered by Holley and DeMarcay (1977) for sites within the Barataria Basin, principally along Bayous des Familles and Barataria, based on excavations by the Delta Chapter of the Louisiana Archaeological Society at the Fleming site 16 JE 36. The third phase is Burk Hill, identified by Brown (1982) on the basis of material from the Burk Hill site (16 IB 100) on Cote Blanche Island.

All three phases are identified principally on the basis of ceramic types and varieties, although difference in percentages and, in some cases, presence or absence of specific varieties, help sort components of one phase from those of another. Principal markers include Plaquemine Brushed, var. Plaquemine, Anna Incised, vars. Anna, Australia, and Evangeline, L'Eau Noir Incised, vars. L'Eau Noir and Bayou Bourbe, Carter Engraved, Maddox Engraved, and several varieties of Addis Plain.

It also should be noted, as present evidence suggests, that it is within this time frame that material of the so-called "Southern Cult" can be found (Weinstein 1984b). The strongest representation of cult designs occurs on pottery to the east in the Barataria phase (Holley and DeMarcay 1977:16; Weinstein 1985). This is probably related to the fact that peoples of the Bayou Petre phase, who were clearly members of the Pensacola variant of Mississippian culture (Knight 1984; Weinstein 1985), had moved into the extreme southeastern portion of Louisiana, particularly St. Bernard and Plaquemines parishes. Other Southern Cult items include fragments of carved stone discs from the Rosedale (16 IV 1) and Shellhill Plantation (16 SJ 2) sites (Weinstein n.d.).

By A.D. 1500, new influences began to be felt in the Louisiana coastal zone, as aboriginal groups began to take on the appearance, at least in material culture, of the

peoples encountered by the early French explorers. This late Plaquemine culture is recognized by one rather overextended phase, called Delta Natchezan. Created by Phillips (1970), this phase includes all south Louisiana sites with ceramics similar to those recorded for the protohistoric and historic Natchez. The type site for this phase is Bayou Goula (16 IV 11), the assumed location of the historic Bayagoula, excavated during WPA days and reported on by Quimby (1957).

Principal ceramic markers of the Delta Natchezan phase include Fatherland Incised, vars. Fatherland and Bayou Goula, and those versions of Addis Plain which contain small amounts of shell, labeled vars. Greenville and/or St. Catherine (Quimby 1957:121-128; Brain 1969; Phillips 1970; Steponaitis 1974). Mazique Incised, var. Manchac and Plaquemine Brushed may be considered minor elements in the assemblage, as well. A small spattering of shell-tempered Mississippian sherds also was noted at Bayou Goula, principally the types Mississippi Plain and Pocahontas Punctated. The presence of minority amounts of shell-tempered pottery at other Delta Natchezan sites, such as Isle Bonne (16 JE 60) and Fleming in the Barataria region (Holley and DeMarcay 1977; Gagliano et al. 1979), argue for a great deal of interaction between the resident Plaquemine peoples and the advancing Mississippians to the north and east.

In the present region, the presence of small amounts of shell-tempered pottery have been recorded by many investigators (Altschul 1978; Gibson 1978b; McIntire 1958:Pl. 13; Weinstein et al. 1978), and these may reflect ties not only to the Mississippian peoples of the Bayou Petre phase to the east, but to what apparently was a small enclave of Lower Valley Mississippians (the Petite Anse phase) who resided on and adjacent to Avery Island (Brown et al. 1979). It has been suggested that this group presumably came to Avery Island to exploit the salt deposits found there and to either trade or carry the salt to the north (Brown et al. 1979).

Within the vicinity of the study areas, one Delta Natchezan component has been excavated. At the Thibodaux site on Bayou Boeuf, the upper two midden levels of Test Pit 1 yielded sherds of Fatherland Incised, vars. Fatherland and Bayou Goula, Maddox Engraved, var. Emerald, Plaquemine Brushed, and Addis Plain, vars. Addis and Greenville (Weinstein et al. 1978:Table 2). Radiocarbon assays on these midden levels produced dates of 515 + 60 B.P.:A.D. 1435 and 460 + 60 B.P.:A.D. 1490, dates whose standard deviations overlap the assumed beginning of the Delta Natchezan phase.

Historic Periods

Two very recent studies by Gibson (1982) and Goodwin et al. (1985b) have provided excellent and detailed summaries of the history of the Atchafalaya Basin and Morgan City areas, respectively. This section, therefore, will provide only a brief overview of the present study areas.

Colonial Period, A.D. 1700 - A.D. 1803

The history of European settlement of south Louisiana begins with La Salle's voyage to the mouth of the Mississippi River in 1682, and Iberville's ascent up the Mississippi River in March 1699. Although the Gulf coast area had previously been claimed for the King of Spain in the sixteenth century by Spanish explorers, their sole interest in the territory lay in its potential for providing treasure, and no attempts at colonization. After Iberville's initial establishment of Forts Maurepas, de la Boulaye, and St. Louis de la Mobile, France's strategy for colonization in the early eighteenth century was primarily to bestow private charters upon individuals who were allowed to

develop their own lucrative schemes to draw settlers into the area. Plagued by financial troubles, internal strife, and Indian attacks, the speculative ventures of neither Antoine Crozat nor John Law were very successful in populating the colony, and Louisiana remained largely unsettled until the influx of the Acadians late in the eighteenth century.

Following the 1763 Treaty of Paris, ending the French and Indian War, France was forced to forfeit to England all of her possessions east of the Mississippi (except the Isle of Orleans). Within a year, both New Orleans and the lands west of the Mississippi were publicly transferred to Spain, although a secret treaty, dating back to 1762 had already provided for such an act.

In spite of the turmoil caused by the land transfer, the change from French to Spanish control was accompanied by a productive shift in governmental priorities for resource development. The Spanish interest in exploiting the colony's rich agricultural potential was manifest in her land grant policies, which required that the grantees build and maintain levees, bridges, roads and ditches, or else forfeit their holdings.

Beginning in about 1765, large numbers of French-Canadian exiles arrived in Louisiana to escape British rule in Nova Scotia. Being well-adapted to the environmental as well as the political climate afforded in French Louisiana, the Acadians settled the land flanking the many rivers and bayous of south-central and southwestern Louisiana, including bayous Lafourche, Plaquemine, and Teche and the Atchafalaya River. Having travelled all the way from Canada, the Acadians found solace in Louisiana among their fellow Frenchmen.

It is during the period of Spanish rule that the first evidence of any inhabitants in the vicinity of the study areas can be found. Such information comes, in part, from a survey of the Gulf coast conducted by Jose de Evia in 1785. Evia mentions numerous settlements in the region, but most appear to have been along Bayou Teche west of the present study areas. However, a map compiled by Juan De Langara in 1799, using the detailed charts and notes supplied by Evia, shows individual settlements along the west bank of the Atchafalaya. Two open circles are shown at locations which today would probably coincide with the town of Berwick and a point slightly to the north, possibly up the Teche. The lowermost circle is labeled "1ª Havitacion" or first habitation.

The earliest settler in the Morgan City-Berwick Bay area was apparently Thomas Berwick, a surveyor of the Attakapas District, who surveyed the region during the 1790s and subsequently settled on Tiger Island where present-day Morgan City is situated. One of Berwick's sons, Joseph, settled across Berwick Bay from his father at the present site of the town of Berwick (Goodwin et al. 1985b:34).

It is conceivable that the first habitation noted on the De Langara map is that of Joseph Berwick. The fact that what may be Joseph Berwick's house is shown on a map compiled from data obtained in 1785, suggests that the Berwicks had actually settled in the area prior to the 1790s. Additional support for a pre-1790 date comes from Cathcart, who, in 1819, noted that Joseph Berwick had been born on Berwick Bay and had lived there for over 30 years (Prichard et al. 1945:793, 795).

By the close of the eighteenth century, most of the major, elevated, natural levees in the region had been settled to some degree. Subsistence farming and stock raising were the principal economic activities, although some indigo cultivation was also attempted. Included in the group of homesteaders were Acadians, Islenos from the Canary Islands, Germans, and English-speaking peoples from the fledgling United

States along the Atlantic seaboard. Also entering the region during the late 1700s, probably after 1770 (Bowman and Curry-Roper 1982:19), were groups of Houma Indians, moving down Bayou Lafourche from their settlements on the Mississippi River near Donaldsonville. Whether the settlers and Houma displaced some of the resident Chitimacha groups or simply occupied an area already abandoned by the Chitimacha is not presently known. However, given the fact that two major Chitimacha settlements are known to have existed along bayous Teche and Plaquemine in the late eighteenth and early nineteenth centuries (Gibson 1978c, 1980; Swanton 1911), it seems likely that the lands in the vicinity of the study areas had been abandoned earlier by the Chitimacha in favor of these two locations.

Throughout the late 1700s both the population and economy of the region continued to grow, principally in relation to the clearing of the land for agricultural purposes. In 1803, this region was transferred from Spain back to France as the political situation changed through the ascent of Napoleon. However, France's economic and political situation forced her to abandon much of her New World holdings in an effort to continue her clashes with England. Thus, later in 1803, France sold her immense Louisiana colony to the United States for $15,000,000.

Antebellum Period, A.D. 1804 - A.D. 1860

Louisiana was admitted to the Union in 1812, withstood the planned British invasion in December 1814 and January 1815 during the closing moments of the War of 1812, and began to prosper as a rich agricultural state. Much of the high natural levees became the location for prosperous sugar plantations. In order to better serve the expanding population, both prior to, and after, becoming a state, the region was divided into districts which, in turn, became parishes. The eastern portion of the study area was originally established as a part of the Lafourche District and the western part as a portion of the Attakapas District. In 1807, Assumption and Lafourche parishes were created out of the Lafourche District. In 1811, St. Mary Parish was formed from St. Martin Parish, a former segment of the Attakapas District. Later, in 1822, Terrebonne Parish was created out of Lafourche Parish.

It is during the early American period that some of the more interesting, and potentially useful, information can be found concerning the history of the study areas. In 1819, the Cathcart expedition passed through the region searching for timber for the U.S. Navy. The journals of the expedition provide additional information on settlements in the region at that time. Cathcart noted settlement on "Cowpen Island," today's Avoca Island:

> Cowpen Island. . .lies South, at the entrance from La Coup to B'ou Boeuf where there is a branch. . .which runs SSE into Bayou Derbon. . .& from that to the sea, the SW branch on which we are runs into Berwick bay—Courses SW 1/4, SW 1/2, W 1/4 of a mile, to a plantation own'd by Alex'r Grassier. . .a Frenchman, & his Father in law John Henry. . .a Dutchman. . . [Prichard et al. 1945:791].

Landreth recorded the same segment of the journey as follows:

> we next steer South by West about half a mile in twelve feet Water which brings us to Bayou Buff. the coup or cut through which we have passed is generally eighty yards wide and is a very handsome creek or Bayou. . .now in Bayou Buff we steer South West about half a mile in twenty seven feet

> water the Land very low on each side some marsh on the right hand side and branch willow no appearance of Live Oak on either side near the end of this reach on the left hand side there is a small Settlement of white people John Henry a Dutchman and Alexander Grosure a Frenchman Lives here the Bayou now bears North west by North and runs about a mile and three quarters in this direction in Eighteen feet Water. . .[Newton 1985:64].

According to Prichard et al. (1945:791, footnotes 235 and 236) the name Grossier does not appear in the American State Papers, but John Henry seems to have filed several land claims for property along Bayou Teche which he reportedly received under a Spanish order dated to 1786. Regardless, the location given by both Cathcart and Landreth would place the Grassier-Henry property along the south bank of Bayou Boeuf near the eastern end of Avoca Island.

After leaving Grassier and Henry, the Cathcart party followed Bayou Boeuf west to Bayou Shaffer. Cathcart noted that the western portion of "Cowpen" (Avoca) Island was claimed by Mr. Rice who lived across Bayou Shaffer on what is now Bateman Island (Prichard et al. 1945:792). Landreth provides a brief description of Rice's plantation:

> in the Atchafalaya we steer down through what is called Berwicks Bay South South East half East and soon get in Eight and nine feet water and from that to five fathoms we steer this course two miles which Brings us to Rices corner at the mouth of Bayou Buff from whence we take a new departure. here Mr Rice owns a very fine and handsome Island which I am told he has a good Title too on which he has built himself a snug little dwelling House on Bayou Buff and open to Berwicks Bay. . .ornamented with two rows of Orange Trees running nearly down to Berwicks Bay and paralel with Bayou Buff Mr Rice has shewn more taste than common here in the arrangment of his Houses and Trees. . . [Newton 1985:70].

No mention is made of any other inhabitants on Avoca Island, although a good bit of detail is provided on Bryant's Plantation at present-day Morgan City, on Berwick's Plantation at today's Berwick, and on Renthrop's Ferry (Prichard et al. 1945:792-796).

Several of the people mentioned by Cathcart and Landreth filed land claims with the U.S. Government following acquisition of the territory in 1803. Some of the individuals, such as Samuel Rice, Sr. and his son, Samuel Russel Rice, were confirmed in their claims. Others, such as John Henry, had their claims rejected. A few claims remained in contention for years and were ultimately settled by the courts. The land comprising the proposed borrow area is an example of the latter, and its case will be discussed in detail in a later section.

The beginning of the American period also corresponded closely with a shift in the economic base of the region. During the 1790s and early 1800s technological improvements in the cultivation and processing of cotton and sugar led to their rapid acceptance as commercial crops throughout southern Louisiana. Stock raising remained important in the present region, especially among small landholders and families of French and Spanish descent who had been established there for some time, but indigo production ceased entirely. Initially sugar plantations were associated predominantly with Anglo-American immigrants who had the large amounts of capital required to finance such operations. Gradually, as the new American planters began to profit from their investments and expand their holdings, the wealthier Creole

landowners were encouraged to shift to sugar cultivation as well. By the 1830s sugar monocrop agriculture had become the mainstay of the regional economy, and in the years preceding the Civil War sugar plantations spread to occupy most of the arable land. Figure 4 illustrates a portion of the La Tourette map of 1846 which indicates the distribution of major landholdings in the vicinity of the study areas at that time.

Civil War Period, A.D. 1861 - A.D. 1865

In 1861, Louisiana seceded from the Union and joined the Confederate States of America. Early in the war, New Orleans and Baton Rouge were occupied by Union troops and became staging areas for expeditions into more remote portions of the state. In 1863, both Confederate and Union forces vied for the strategic location of Berwick Bay and Brashear City.

Goodwin et al. (1985b:60-64) provide a good review of the Brashear City area during the war. Principally, the location was highlighted by the initial construction of two Confederate forts: Berwick and Chene. Fort Berwick consisted of:

> An earthen fort, quadrilateral in shape with parapets five feet high on three sides, the rear being protected by palisades about seven feet high, loopholed for musketry, the whole was surrounded by a moat six feet wide in front and three feet in rear. On the front face two 24-pdr pivot guns were mounted which commanded the outlet of Wax Bayou [Casey 1983:24].

The fort was built in July, 1861, and was designed to prevent access, through Wax Bayou, to the marshes to the west and the southern edge of the Teche ridge. The fort was located in the northeast corner of Section 16, Township 16S, Range 12E, along what is today the north bank of Little Wax Bayou at its junction with the Lower Atchafalaya River. Casey (1983:24-25) reports that the fort was abandoned in April, 1862, after the fall of New Orleans.

Fort Chene was another small earthwork located at the junction of bayous Chene and Shaffer, along the southeast edge of Avoca island (Gibson 1978b:171; Casey 1983:44). It was built in August, 1861, and contained a small, central barracks area protected by an outer ditch around the earthworks (Casey 1983:44). The entrance to Bayou Chene apparently was closed off by a stockade. Armament consisted, at various times, of two 24-pd pivot guns, one rifled 32 pounder, and four 24 pounders (Casey 1983:44). As with Fort Berwick, Fort Chene was abandoned in April, 1862, after the guns were spiked (Casey 1983:44).

Union forces moved into the region in October, 1862, under the command of Brigadier General Godfrey Weitzel. Included in the force were four gunboats, Estella, Calhoun, Kinsman, and Diana (Goodwin et al. 1985b:62). With the gunboats patrolling the Atchafalaya River and Bayou Teche, the Union troops occupied Brashear City and built additional fortifications. Figure 5 shows a map of Union earthworks and minor forts as drawn in 1865 by Captain P. Harris of the U.S. Corps of Topographical Engineers. Included in these were Fort Brashear (later to become Fort Star), shown at the western edge of the city, Fort Buchanan, opposite the mouth of Bayou Teche; a water battery on Berwick Bay, and a redoubt located north of the railroad near the center of town (Casey 1983:32-33). Embankments, including two redans, were built to connect the principal earthworks within the city (Casey 1983:33).

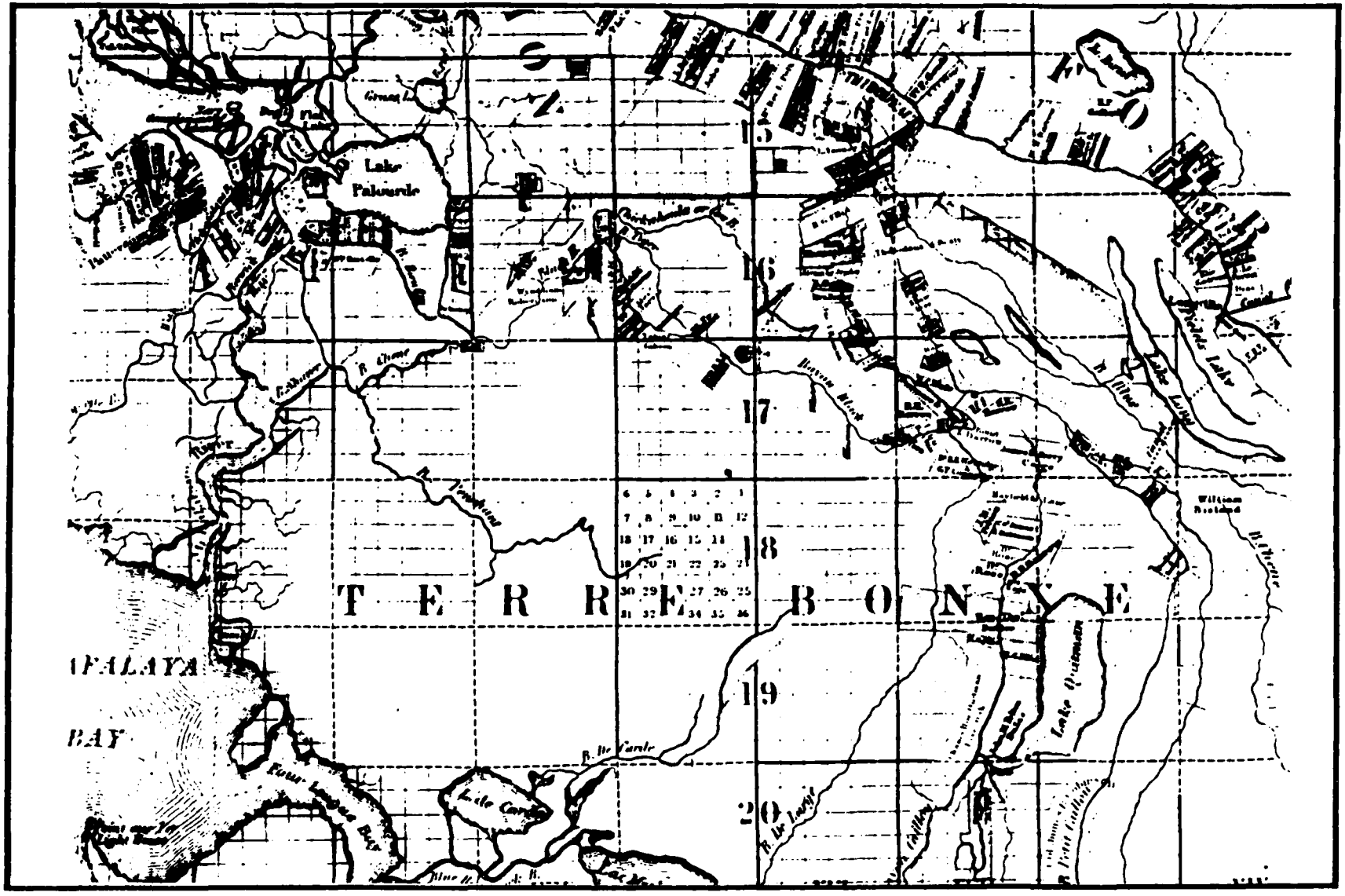

Figure 4. **Detail of the La Tourette map of 1846, showing principal landowners in the vicinity of the study areas. (After La Tourette 1846.)**

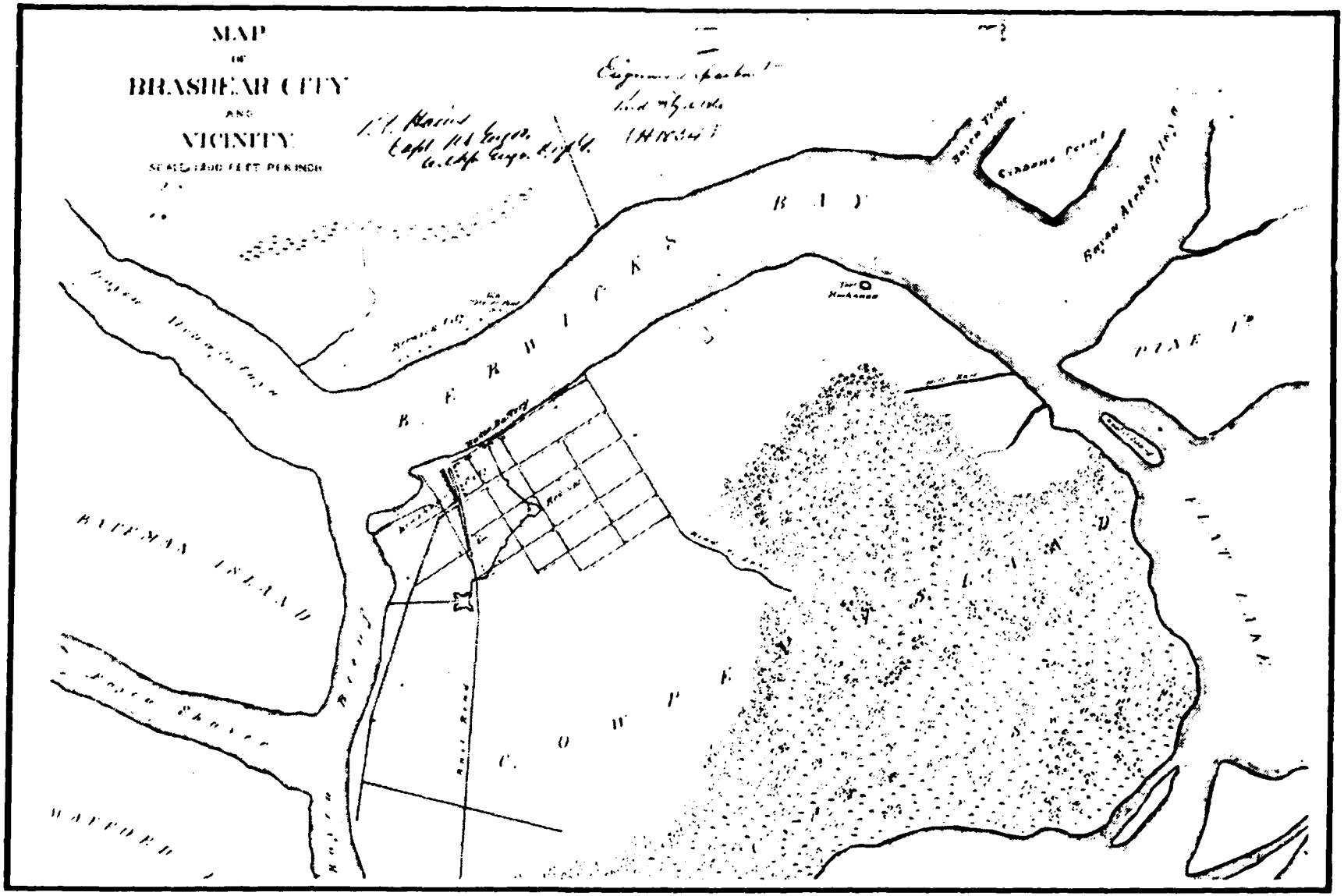

Figure 5. Portion of the Union map of Brashear City and vicinity during the Civil War, showing military installations and associated earthworks. (After Harris 1865, reproduced in Casey 1983:Pl. 47.)

Another minor fort was apparently constructed at Boeuf Station, on the east bank of La Coup just south of the crossing of the railroad. Called Fort Weitzel on several maps of the era, little is known of the post (Casey 1983:243). It may simply have been a small earthwork garrisoned by a few troops.

In June of 1863 the Confederates launched a waterborne assault on the north bank of Tiger Island and captured Brashear City by approaching from the east (Goodwin et al. 1985b:64). At the same time, Confederate forces marched westward from Thibodaux along the railroad line and captured the fort at Boeuf Station (Bergeron 1985:203).

Confederate control of the region was short lived, however. On July 9, 1863, the Confederate forces at Port Hudson surrendered, freeing the large Union siege force for action in south Louisiana. Fearful that Confederate forces would be trapped east of the Atchafalaya River, Major General Richard Taylor, commander of Confederate troops in south Louisiana, ordered all his forces west of Berwick Bay to Bayou Teche. This retreat left the region open to Union forces, which moved in shortly thereafter (Bergeron 1985:204).

Of interest from this time period, is a Confederate map of St. Mary Parish, completed in 1864, after the Confederate withdrawal across Berwick Bay (Confederate States of America 1864). It not only shows fortifications occupied by both sides, but includes the locations of plantation buildings (main houses, sugar mills, quarters areas) along the north bank of Avoca Island. Sections 40, 41, 43, and 47 each contain one plantation complex, while Section 45 appears to contain two complexes. These almost certainly represent the holdings of Wofford, Rochelle, and Edwin Stansbury, the latter a large landowner on Tiger Island who also acquired land on Avoca Island (Goodwin et al. 1985b:49).

Following the Civil War, a period of economic stagnation developed. This lasted throughout much of the Reconstruction era, but was followed by a period of economic growth and renewal in the last few decades of the nineteenth century. This upswing was due to innovations in agricultural practices, such as artificial rice irrigation, to the application of new scientific techniques to cane and cotton farming, to the discovery of oil and sulphur in the southwestern parishes of the state, and to the growth of the lumber industry, which was spurred by the completion of several railroad systems.

Post Civil War, A.D. 1866 - A.D. 1899

After the Civil War the sugar industry slowly recovered to its pre-war eminence as the premier plantation crop. For the sugar industry, the post-war period was characterized by consolidation of sugar factories. The rebuilding or repair of all the factories idled during the war was not economically feasible. Sugar production in the area increased steadily after 1880 (Rehder 1971; Goodwin et al. 1985b:70).

In 1869 Charles Morgan purchased the bankrupt New Orleans, Opelousas, and Great Western Railroad, and renamed it Morgan's Louisiana and Texas Railroad. In conjunction with his fleet of steamships operating out of Brashear City, Morgan's railroad was able to streamline transportation, commerce, and communication with the west. In 1871, Morgan had a ship channel dredged through the Lower Atchafalaya River in order to facilitate his steamship line. By 1873, Morgan's impact on Brashear City had been tremendous, and had helped bring the region out of the economic depths of Reconstruction. As Goodwin et al. (1985b:78) note, that year the Louisiana

legislature changed the name of Brashear City to Morgan City, in honor of the various Morgan accomplishments.

The late-nineteenth century was also characterized by the rapid expansion of industrialized cypress lumbering. This expansion resulted in the denuding of all virgin cypress stands in south Louisiana by the 1930s (Mancil 1972). Important lumber mills in the Morgan City area included those at Patterson and Bayou Ramos.

The Modern Period, A.D. 1899 - A.D. 1987

During the first quarter of the twentieth century sugar production and lumbering continued as the major industries in the region. After the 1920s lumbering declined with the depletion of cypress swamps. Morgan City grew slowly until the discovery of oil and gas in St. Mary Parish during the 1920s. Since that time Morgan City has developed into a major port facility for the oil and gas industry.

Oil and gas exploration, both in the marshes and swamps of the region and offshore in the Gulf of Mexico, has led to the alteration of much of the area's landscape. Extensive oil-rig fabricating yards have developed along Bayou Boeuf and Bayou Black, reworking and destroying much of the earlier cultural evidence, both prehistoric and historic, for those areas. Hundreds of miles of canals have been dredged for both well sites and pipeline routes, and saltwater has begun to move up these canals destroying large expanses of freshwater marsh. With the loss of the marsh grass, the terrain breaks up and vast areas of open water develop. The Corps of Engineers is presently studying and implementing ways to alleviate this problem.

CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY

The goals of the present research were 1) to locate cultural resources occurring within the study areas; 2) to assess their significance in terms of criteria for nomination to the National Register of Historic Places; 3) to make recommendations for their treatment; and 4) to contribute to our understanding of the archeology of the region.

The findings of previous archaeological and geographical research within the Mississippi Deltaic Plain suggest that there has been considerable continuity in certain aspects of human adaptation to the region due to the environmental constraints present. In particular, the spatial relationship of settlements to the landforms or depositional environments of the deltaic plain exhibits a marked consistency through time. Certain features, especially elevated natural levees, appear to have been the predominant location of human habitation sites of all periods (Kniffen 1936; Knipmeyer 1956; McIntire 1958; Gagliano et al. 1979). Several factors are responsible for this pattern. First, in many cases natural levee ridges were the only elevated and relatively well-drained terrain available. In this regard they provided a base for dwellings and land for agricultural fields. Natural levees also represented an important habitat for terrestrial game, as well as a source for raw materials. A third factor contributing to their extensive use by human groups was their proximity to open water. This was important not only for human subsistence, but for transportation as well.

The present research provided the opportunity to gather locational data on past land use within three small areas of the deltaic environment and to obtain additional data from a previously recorded archeological site, 16 SMY 130. The study was conducted in several phases.

Historical Research

The first phase involved historical research on the sequence of ownership and land use within the study areas. Title searches were carried out in the St. Mary Parish courthouse in Franklin, Louisiana, and the extensive holdings of the Morgan City Archives in Morgan City, Louisiana were examined. Additional documentary research was performed in the Troy-Middleton Library at Louisiana State University and in the Archives and Louisiana Collections housed in Hill Memorial Library at that school. Two family collections held at the latter repository, the John N. Pharr family papers and the Jared Y. Sanders family papers, are valuable sources of information on two periods in the history of Avoca plantation. In addition to these documentary collections, cartographic and aerial photographic records on file at the Louisiana State Archives, the U.S. National Archives and Records Service, the New Orleans District of the U.S. Army Corps of Engineers, and Coastal Environments, Inc. were examined.

Initial Borrow Area Survey

The second phase of the study consisted of an intensive pedestrian survey of the initial borrow area. Two crew members walked linear transects spaced 15-m apart down the long axis of the area. Shovel tests were excavated at 20 m intervals along each transect, and the fill from all tests was screened through 1/4-in mesh.

Testing of Site 16 SMY 130

The third phase of the study involved a program of test excavations at site 16 SMY 130 within the levee right-of-way. Previous investigations at the site had focused initially

on the prehistoric component (Gagliano et al. 1975:137) and later on the historic remains (Gibson 1978b:168-169; Gibson 1982:581-582), but little was known about the specific content or cultural affiliation of the site. The present investigation was intended to document the extent, configuration, age, and integrity of the cultural remains there, and to assess their significance in terms of criteria for nomination to the National Register of Historic Places. The fieldwork was conducted by four individuals and began with topographic mapping of the area and establishment of a grid which was tied to U.S. Army Corps of Engineers benchmarks located along the levee. The levee served as the baseline for the grid, and lines were run perpendicular to it at 15 m intervals for purposes of controlled surface collection and systematic subsurface testing. Due to the thickness of recent overburden on the stream side of the levee and the density of vegetation cover found throughout much of the area, surface collecting was restricted to the bankline of Bayou Shaffer. One crew member was assigned to each 15 m long unit and allowed five minutes to collect material occurring within it.

Upon completion of the bankline collection, a series of shovel and auger tests were excavated at 20-m intervals along the grid lines in an effort to locate and delimit subsurface cultural deposits. Additional tests were dug in areas which appeared to contain concentrations of cultural material. The stratigraphy encountered in each test was recorded, and the fill from all shovel tests was screened through 1/4-in wire mesh.

Based upon the results of the bankline collection and the systematic subsurface testing the location of a 1-m by 2-m excavation unit was selected. The spot chosen was located along the bankline of Bayou Shaffer where an historic feature was noted eroding from the streambank. The unit was excavated in 10-cm levels, and the fill from all levels was water-screened through 1/4-in wire mesh.

Another aspect of the test excavations focused on a historic cemetery area located immediately east of the levee right-of-way. In order to determine whether unmarked graves might extend into the study area, the ground in this vicinity was systematically probed to a depth of ca. 1 m at 5-m intervals and a magnetometer survey was performed. Later, in an effort to identify the sources of the anomalies and to insure that no graves were present in the study area, a small tractor with a grader box was used to remove the humus from the area and additional probing and shovel testing were conducted.

Alternate Borrow Area Survey

As noted previously, changes in the project design after the submission of the draft report resulted in the selection of an alternate borrow area. This area was surveyed by a three-person crew in much the same manner as the first borrow area. In this case, however, the transects were spaced 20-m apart, and shovel tests were excavated at 50-m intervals along each transect.

Additional Testing at Site 16 SMY 130

The project design changes also threatened to impact an area of site 16 SMY 130 which had been recommended for avoidance. Additional test excavations, including the excavation of five backhoe trenches and six auger borings, were conducted in this area by a three-person crew.

CHAPTER 5: RESULTS OF THE STUDY

The Levee Right-of-Way and the Alternate Borrow Area

History of Land Ownership and Use

The earliest record of ownership of land within the levee right-of-way and alternate borrow area is a claim filed by Samuel Rice, Sr., for "a tract of land situate in the county of La Fourche, on the bayou Boeuf, at the place usually called Coupen Island, containing six hundred and ninety-four hundreths superficial acres" (Lowrie 1834:363-364). Rice's claim was based on occupation of the property prior to December 20, 1803, and was confirmed by the U.S. Congress. As indicated previously, the Cathcart expedition of 1818 and 1819 noted that Rice resided on nearby Rice's (now Bateman's) Island and kept cattle on the Avoca Island tract (thus the early name for the island, Cowpen) (Prichard et al. 1945:792; Newton 1985:70). A map made in 1842 as part of a survey of the military approaches to New Orleans shows in detail the arrangement of structures on his plantation on Rice's Island, but unfortunately does not extend to Avoca Island (Williams 1842:56). Thus, it is not known whether Rice built any structures on the Avoca Island tract.

In 1825 Rice sold his property on Avoca or Cowpen Island to William Washington Wofford, Sr. (Mortgage Office Book [M.O.B.] 1-296), a native of South Carolina who had moved to St. Mary Parish several years earlier (Cain 1985). It is unclear whether Wofford resided on the property or simply used the land for agriculture as Rice had. The earliest records of sugar production in Louisiana, from 1828 and 1829, do not list Wofford, so presumably he was not planting sugarcane at that point (Degelos 1892). However, in 1844, the date of the next available sugar records, the plantation is shown as producing 142 hogsheads of sugar (Champomier 1845). William Wofford had sold the property to his son, James Nixon Wofford, the previous year, so it is possible that sugar production and residence on the plantation began with the younger Wofford (Cain 1985). By 1850 J.N. Wofford had added a steam-powered sugar mill to the property (Champomier 1850), and within the next decade built a fine two-story Greek Revival mansion there (Figure 6). The location of these two structures is shown on a Confederate States of America map of 1864, which may be the earliest depicting buildings on the property (Figure 7). The plantation house was situated near the junction of Bayous Boeuf and Shaffer, and the sugar mill was located approximately one quarter mile south of there. Between these two buildings is shown a group of smaller structures which probably represent slave quarters and service buildings.

Wofford's ownership of the property brought other changes as well. His wife, the former Mary Diana Tabb Cocke, is credited with changing the name of the island from Cowpen to the more lyrical Avoca (Cain 1985). The name was taken from a glen in Wicklow County, Ireland, where the Avonmore and Avonbeg Rivers unite to form the Avoca (Avoca Island file, Morgan City Archives). Eventually the name was applied to the Woffords' plantation as well. By the beginning of the Civil War J.N. Wofford owned two other plantations in this vicinity, Sunnyside and the Dooley Tract. The 1860 U.S. Census listed the value of his real estate as $200,000 and the value of his personal property as $100,000 (U.S. Census 1860). The agricultural schedules for that census indicate that Avoca Plantation consisted of 300 ac of cleared land and 1826 unimproved acres. Livestock present on the property included 20 horses, 65 mules, 15 milk cows, 4 oxen, 50 other cattle, 150 sheep and 100 pigs (U.S. Census 1860). In addition to sugarcane the plantation produced 4,000 bushels of corn and 75 tons of hay, primarily for livestock feed.

Figure 6. Photograph of the Wofford plantation house in the late nineteenth century (Courtesy of the Morgan City Archives).

Wofford opposed the war and sought refuge in Texas during that period (Cain 1985). When he returned to Avoca Island after the war he found that the plantation had been seized by the Bureau of Refuges, Freedmen and Abandoned Lands, and that it was occupied by a tenant (Jared Y. Sanders family papers). Wofford succeeded in recovering Avoca Plantation, but apparently much of his personal property had been removed. He was forced to borrow heavily from a business partner, John Van Bergen, in order to rebuild the plantation. An inventory of the plantation, taken on January 1, 1866 in conjunction with Van Bergen's loan, listed the following items:

3 milch cows	2 anvils
1 calf (about six months)	3 blacksmith vise
1 cross cut saw	1 pair stocks
1 mule cart complete	3 blacksmith tongs
1 single horse cart complete	1 sledgehammer
1 wheel barrow	1 hand hammer
2 pair cart wheels and axle	1 ____ plane

1 jack plane

1 smoothing plane

2 augers

1 hand axe

2 pit saws

23 plows - half good

1 dog chain

3 harrows

1 sugar house, five kettles good but not set - engine in running order

One-third of a cart load of seed

Cane from "Aunt Rody"

No mules on the place

Five double trees

Ten single trees

1 flat boat

1 corn mill in good order

1 blacksmith shop, not in running order

14 cabins and 1 school house

1 overseer house and kitchen

1 corn house and stable together

1 dwelling house and cabin formerly occupied by Mrs. Joseph Wofford

The Vinson line fence about one-third down

The south fence about three quarters down

The pasture fence complete

The usual ditches - not cleared

The bridges all in bad order - some gone

Some wood cut but in the wood on the Sunnyside Plantation
1 dwelling house, kitchen and four cabins and some fencing

12 ac of first-year stubble cane and seed cane enough to plant 13 ac single or 6 1/2 ac double

No corn, shucks, hay nor fodder on the plantation

1 engine and draining machine, the upper pipes of which all gone and steam chest lid gone.

J.P. Van Bergen retains a special lien upon the stock and implements put upon the Avoca Plantation. This done and signed in duplicate Parish St. Mary, Louisiana, March 2, 1866.

John P. Van Bergen
J.W. Wofford

Finally, in 1868 Wofford was unable to make the payments on Van Bergen's note, and his plantations were sold at a Sheriff's Sale.

Van Bergen, a native of New York who had married the daughter of St. Mary Parish judge Joshua Baker, purchased Avoca Plantation at the sheriff's sale and in 1872 mortgaged it to three brothers, James, Peter, and Thomas Sturges of New York (M.O.B. 24-15209). Apparently Van Bergen defaulted on the loan, for in 1877 his wife, Margaret, repurchased it from the estate of the Sturges (Conveyance Office Book [C.O.B.] S-13329), and one week later sold it to Dr. Chester Bidwell Darrall

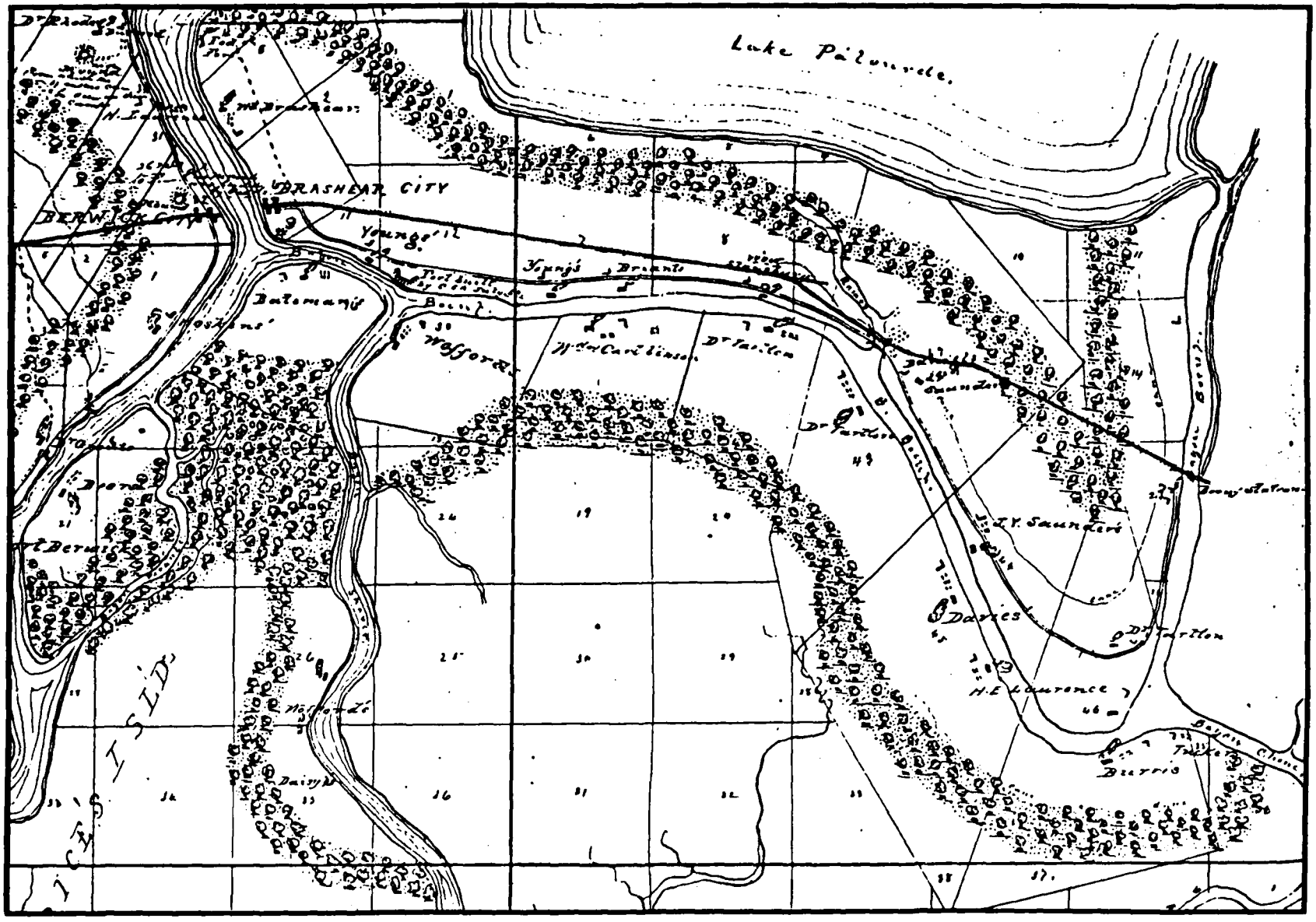

Figure 7. Portion of a map of St. Mary Parish showing the location of structures in the vicinity of the two study areas ca. 1864 (After Confederate States of America 1864).

(C.O.B. S-13330). After the rapid changes following Wofford's ownership, the plantation was to remain in Darrall's hands for many years.

C.B. Darrall was born near Addison, Pennsylvania, in 1842 and served as a surgeon with the New York Volunteer Infantry in the Civil War (Chester Bidwell Darrall file, Morgan City Archives). After the war he moved to Morgan City, Louisiana, and lived there until 1900. He represented St. Mary's Parish in the Louisiana Senate from 1869 to 1870 and served as the U.S. Congressman from that district from 1873 to 1879 and from 1881 to 1883. During Darrall's ownership of Avoca Plantation, its sugar operations were expanded, increasing from 100 hogsheads of sugar during the 1879-'80 season (Bouchereau 1880:90) to 2,023,989 lbs (1840 Hhds) during the 1894 - '95 season (Bouchereau 1895). The latter figure reflects the combined production of Avoca and nearby Oakley Plantation, which was also owned by Darrall. By 1899, the Avoca Plantation sugar house consisted of a wooden building that contained double effects, vacuum strike pans and centrifugals as refining equipment (Bouchereau 1899:12). Unfortunately, it was also during Darrall's ownership that the mansion built by James N. Wofford burned (Cain 1985). The latter event occurred in 1895, and apparently Darrall rebuilt shortly after that, possibly on the same location. After running unsuccessfully for the 50th Congress he moved to Washington, D.C., in 1900, and died there in 1908.

Avoca Plantation, along with Oakley Plantation, was sold in 1900 to the New Orleans firm of Abraham Ermann and Leon Cahn (C.O.B. KK-25554), which then sold both plantations to Captain John Newton Pharr in 1901 (C.O.B. LL-29020). Pharr was already one of the largest sugarcane growers in the state, and he was still expanding his operations. At that time he owned eight plantations valued at more than $400,000, including Fairview, Glenwild, and Blue Boy on Bayou Teche, and Aleda plantation on the eastern end of Avoca Island (Sitterson 1953). However, like many of the large plantation owners of the period, Pharr had begun with very little and built his holdings slowly. He was born in 1829 in Macklenburg County, North Carolina, and later moved to northern Mississippi to work for his uncle (Pharr family file, Morgan City Archives). In 1848 he left Mississippi and again headed west, this time to St. Mary Parish, Louisiana. He got a job as a plantation manager for Judge Joshua Baker on Fairfax Plantation below Centreville (Pharr n.d.:1). Pharr worked for Judge Baker for approximately eight years and apparently saved much of his earnings, for in 1856 he left the plantation and purchased a small steamboat (Pharr n.d.:3). He used the vessel to cut and haul timber from swamp lands which could be bought for a few dollars an acre. As his profits grew he purchased additional tracts of land. When the Civil War broke out, Pharr opposed secession, but joined the Confederate Navy as a captain and worked in the quartermaster service along with his boat. After the war he returned to the swamping business and built a sawmill in New Iberia along with a partner, Sylvanus Gall (Pharr n.d.:8). There Pharr met and in 1868 married Henrietta Clara Andrus. A son, John Andrus, was born to them in 1870, and a second son, Henry Newton, was born in 1872.

By 1874 Pharr was venturing into new enterprises: first, winning a government contract to handle the mail between New Iberia and Morgan City. Lacking sufficient boats to do the work he purchased additional ones: the "Rene McCrady," a sidewheeler, and the "Mary Lewis," a sternwheeler (Pharr n.d.:7). Later Pharr added another sternwheeler, the "Mattie," which carried passengers, freight and mail between Morgan City and Abbeville. His boats came to be known as "The Pharr Line," and he ran a store in Morgan City called "The Pharr Line Store."

In 1876 Pharr purchased his first plantation, Glenwild, for $12,000 cash (Pharr n.d.:10). Later that year he bought nearby Fairview Plantation for $40,000, of which $10,000 was in cash and the remainder in annual notes. He then moved his family to Fairview and began overseeing the operation of his two sugar plantations. At that time both Fairview and Glenwild had open kettle sugar mills. Shortly after moving to Fairview a third son, Eugene Albertus, was born.

Throughout the remainder of the nineteenth century, Pharr devoted most of his efforts to his sugar plantations, gradually increasing their number, size, and productivity. After the first railroad bridge over Berwick Bay was completed in 1881, he recognized that his steamboats would no longer be in demand, so he sold them to the railroad. In 1889, he dismantled the Fairview sugar mill in order to consolidate his processing operation in a modernized facility at Glenwild (Pharr n.d.:19). The Glenwild mill became the first in the state to keep records of cane weights and laboratory analyses of the cane. By the turn of the nineteenth century he had formed J.N. Pharr and Sons, Ltd., and his three sons, John Andrus, Henry, and Eugene, were helping him manage the company holdings.

During the Pharrs' ownership of Avoca Plantation the sugar mill erected there by James N. Wofford was dismantled and the cane shipped to their mill at Glenwild. The house built by C.B. Darrall, possibly on the site of the old Wofford house, had burned in 1900, but according to the diary of John A. Pharr it was rebuilt (Pharr n.d.:40). A later entry in the diary notes that in 1902 John A. Pharr built a cottage on the island after the Darrall house burned (Pharr n.d.:70). It is not clear whether this cottage represents the rebuilding of the Darrall house or the erection of a second structure. In either case, Eugene Pharr was married in 1902 and moved to Avoca Island in that year. Possibly he resided in the cottage or some other structure at first, for a 1905 entry in his brother's diary states, "The Avoca house was remodeled and E.A. Pharr and his wife moved there to live" (Pharr n.d.:50). Further alterations are noted in 1914:

> This year E.A. Pharr remodeled his Avoca residence, using part of the cottage, which was built in 1902 by J.A. Pharr after the old Avoca Darrall house burned, and adding to it. The completed house was of two stories, a frame building with stuccoed outer walls and tile roof. It was of the semi Spanish type. While this house was being built he and his family lived in the Costello House in Morgan City [Pharr n.d.:70].

This is the structure which presently stands at the junction of Bayous Boeuf and Shaffer (Figure 8).

J.N. Pharr died in 1903 and operation of the company's businesses then fell to his sons. Eugene Pharr assumed management of Avoca Plantation and all of the company's other holdings on Avoca Island. This included Aleda Plantation, which had been purchased by J.N. Pharr in 1892 and was the location of a small drainage project begun in 1894. During the first two decades of the twentieth century Eugene expanded this project to include virtually all of Avoca Island. Working first through J.N. Pharr and Sons, Ltd., and later through the Avoca Island Drainage District, he completed miles of levees and canals and built three massive pumping stations. One of these structures, Drainage Plant No. 1, is shown in Figure 9 in a photograph taken not long after its completion (Pharr family collection, LSU Archives). By 1917, approximately 16,000 ac had been drained. Part of this land, 5500 ac, was to be used by J.N. Pharr and Sons, Ltd., for sugarcane and corn cultivation, but the remainder was to be part of an elaborate livestock raising venture known as the Louisiana Livestock Company, Inc. (Pharr family files, LSU Archives). This company was apparently started by the Pharr

Figure 8. Present view of the Pharr house looking south.

brothers in an effort to make rapid use of the newly reclaimed land and to provide a use for the by-products of cane and corn cultivation. Plans were drawn up for a series of cattle and hog farms distributed across the central and southern portions of Avoca Island. Advertisements were run showing the impressive drainage plants and the results of their work, presumably in an effort to interest other investors (Figures 10 and 11).

The architect of most of these plans and of the massive drainage system was apparently Warren B. Reed, an engineer. In a prospectus for the Louisiana Livestock Co., Inc., Reed described in detail the drainage system installed on the island and the potential of the reclaimed land for the proposed stock raising venture (Pharr family collection, LSU Archives). Illustrating this document are two large panoramic photographs which provide a wealth of information on the location of structures on Avoca Plantation ca. 1912. The first photograph, shown as Figure 12, was taken from a point near the junction of Bayous Boeuf and Shaffer, and looks southeast toward the plantation. On the extreme left of the picture is the new bridge connecting Avoca Island with Tiger Island. At its foot are a commissary and one or more houses. The main house of that period, possibly the cottage built by John A. Pharr in 1902, is partially hidden by trees near the right center of the figure. To the right of the main house the numerous small white fence sections are part of Eugene Pharr's orchards and gardens. A wooden bulkhead can be seen along the bayou in front of the main house and gardens.

Figure 9. Photograph of Drainage Plant No. 1, ca. 1917.

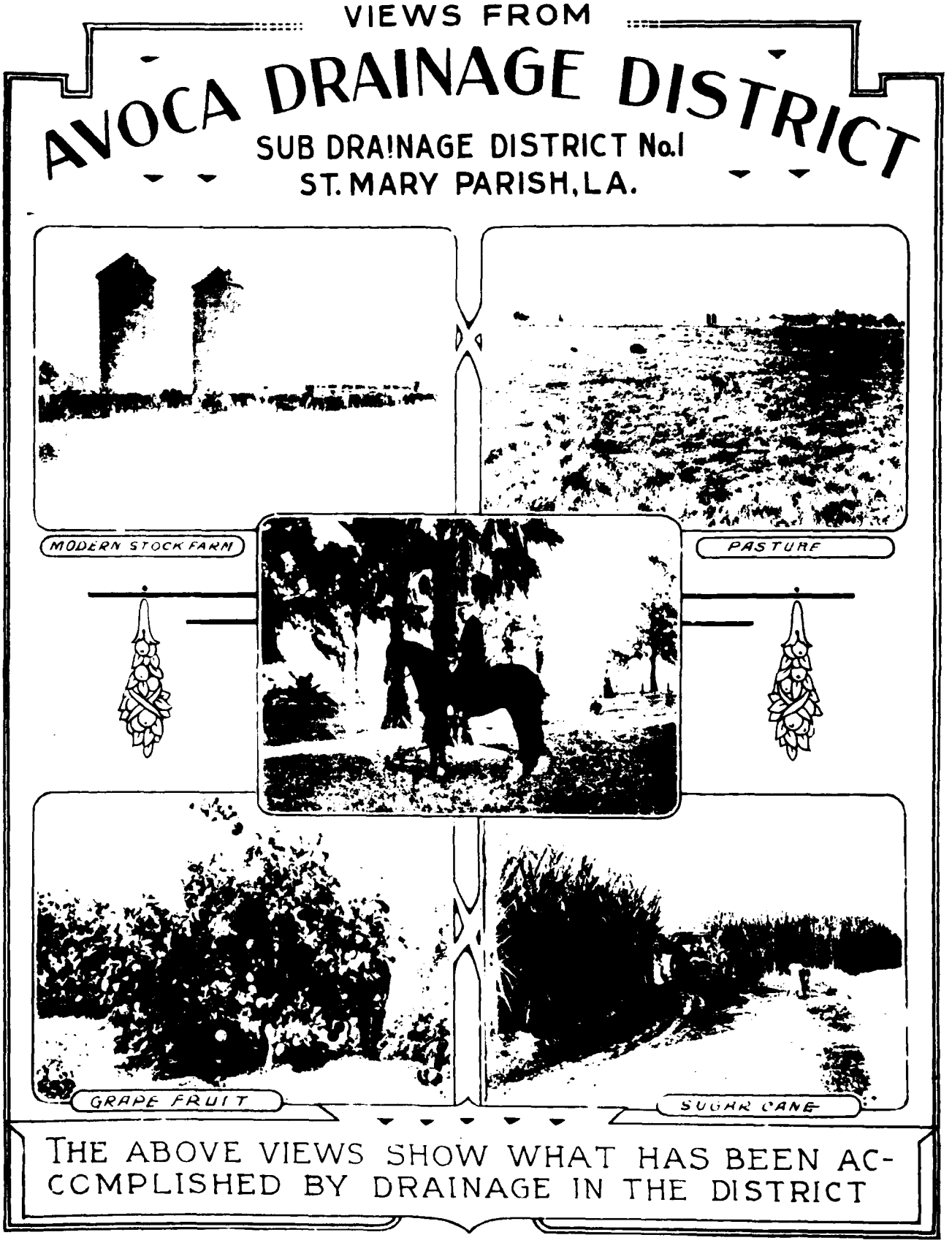

Figure 10. Advertisement showing the results of drainage work on Avoca Island (Pharr family papers, LSU Archives).

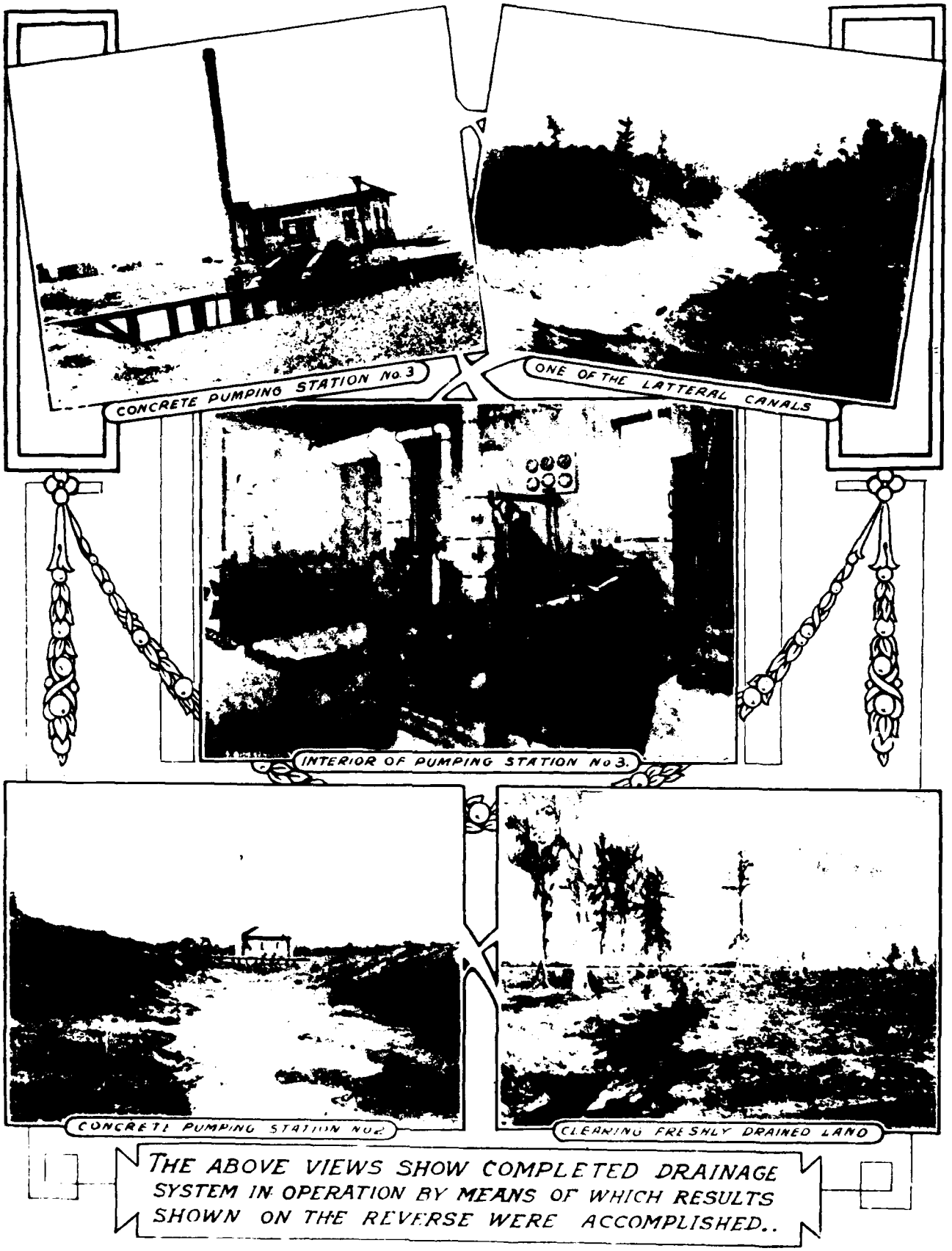

Figure 11. Advertisement showing the drainage system on Avoca Island (Pharr family papers, LSU Archives).

Figure 12. Panoramic photograph looking southeast at Avoca Plantation, ca. 1912 (Pharr family papers, LSU Archives).

Figure 12 continued.

A row of workers' quarters is located to the right of Pharr's orchards and gardens. They appear to have been frame structures with side-gabled roofs and porches across the front. They faced south with chimneys on their east ends. Privies are discernible to the west of the houses along Bayou Shaffer. In fact, one of the privies appears to have been falling into the bayou at the time the photograph was taken, further indication of erosion problems at this location.

South of the quarters in the right portion of the photograph is a large white frame structure which was the mule barn for the plantation. To the right of the barn and directly on the bank of Bayou Shaffer are another large white structure and a smaller building which extends over the water. These are probably the sugarcane shed and wharf from which Pharr shipped the plantation's cane to the mill at Glenwild (George Picou, personal communication). Additional service buildings and houses are visible south of the shed and wharf.

The second photograph, Figure 13, was taken from the rear of the service building complex on the plantation and looks north. In the left foreground is a row of pig pens. Between them and the mule barn and cave shed is a house which was not visible in the other photograph. Unlike the workers' quarters it is of the Creole type and faces north. It also has an attached kitchen on the rear and a cistern. In front of this house and to the right of the mule barn is the wagon yard. A number of two-wheeled cane carts are parked there. Beyond the wagon yard to the north are the workers' quarters along Bayou Shaffer. To the right of the row of quarters is another house which was not visible on the previous photograph. It faces west and appears to be an L-shaped structure with an interior chimney. Like the house south of the wagon yard, it has a cistern behind it. To the right of this house is a shed, probably for equipment storage, and closer to the foreground, a small house which seems to face north. In the background the upper portion of the main house is just visible.

In the central foreground of the photograph a man and a small boy are loading barrels onto a mule-drawn sled. Immediately behind them is a shed, and in the background are two silos with a number of cattle grazing around them. To the right of the silos is a large structure which is probably a combination barn and storage shed. South of this structure and extending across the right half of the photograph are additional workers' quarters and beyond them, a large barn. The houses in this area are of several types: three are shotgun houses with chimneys to the rear; one is a Creole type; and one has a side-gabled roof with entrance on the long side. Some of the houses have cisterns, while others apparently do not. All have privies along the back fence lines. In summary, the two photographs illustrate most of the structural types to be found on a bayou sugar plantation of the period. The one major omission is the sugar mill, which by this time had been torn down.

By 1920 J.N. Pharr and Sons, Ltd., had invested several hundred thousand dollars in the huge reclamation project on Avoca Island, apparently with little return. In that year sugar prices fell dramatically due to the availability of inexpensive sugarcane from the West Indies. The Pharrs lost approximately $500,000 on the 1920 crop and another $300,000 in 1921 (Pharr n.d.:83). With their financial reserves drained by the reclamation work, J.N. Pharr and Sons, Ltd. went into receivership in 1921. Over the next few years they sold off some of their holdings, and sugar prices rose slightly so that they were able to gradually pay off their creditors. Then in 1927 the Mississippi Valley was hit by a devastating flood which breached the levees on Avoca Island and destroyed much of the Pharrs' work there. This time the losses were apparently too great, and the Pharrs again went into receivership and were forced to sell their properties. Their Avoca Island holdings, including Avoca Plantation, were purchased

Figure 13. Panoramic photograph looking north at the service buildings and quarters on Avoca Plantation, ca. 1912 (Pharr family papers, LSU Archives).

Figure 13 continued.

at a sheriff's sale in 1928 by Charles W. Fox for the Whitney Bank of New Orleans, one of the Pharrs' major creditors (C.O.B. 4Q-53896).

Eugene Pharr was permitted to remain in his house on the island until his death in 1931. In that year Fox transferred ownership of the property to a holding company, Avoca, Inc., for 858 shares of stock in the company (C.O.B. 4X-56493). This represented over half of the total number of shares issued, and Fox became the first president of the company. The new owners made no attempt to revive the ambitious reclamation project, and, in general, few changes occurred on the island during this period. A 1931 aerial photograph of the Avoca Plantation building complex indicates that most of the structures shown on the ca. 1912 panoramic photographs were still present. Exceptions are the row of workers' quarters which were located immediately south of Pharr's gardens along Bayou Shaffer, and the probable cane shed, located further south along the bayou (Figure 14). Additional workers' quarters are present along two roads which run south from the main building complex, one directly along Bayou Shaffer and the other approximately 200 m east of the bayou. Some of these houses may be new structures, built to replace those removed further north, or they may simply have been outside of the view of the earlier photographs. One structure which is definitely new is a long narrow equipment shed located in the central portion of the complex. A 1935 topographic map of this area illustrates this same arrangement of structures, and indicates that there was at that time no levee along Bayous Shaffer or Boeuf within the study area.

Figure 14. 1931 aerial photograph of the Avoca Plantation building complex (U.S. Army Corps of Engineers).

In 1937 Avoca, Inc., leased the hunting rights on the property to a group of New Orleans businessmen who were former members of the exclusive Delta Duck Club. The latter club had lost its hunting territory at the mouth of the Mississippi River when the U.S. Government established a wildlife refuge there. The new Avoca Duck Club took over the old Pharr plantation house and continues to maintain it for the use of its members. Due primarily to their desire to preserve the excellent wildlife habitat on the island, there have been few changes over the years. The principal activities on the property, aside from duck hunting, are oil and gas production and farming by lessees on the northern portion of the island.

Construction of the Bayou Boeuf Lock and Dam in the 1950s brought an uncharacteristic period of change to the island. U.S. Army Corps of Engineers plan drawings for the project provide detailed information on the location of structures at that time (U.S. Army Corps of Engineers 1951b). Only a few of the service buildings and quarters located south of the Pharr plantation house remained at that point, and there was still no levee around the complex, the first one being built as part of the lock and dam project. Four structures located a few hundred feet east of the Pharr plantation house were in the levee right-of-way and had to be moved, but there were no structures standing west of the Pharr house in the right-of-way. An aerial photograph taken in November of 1951 during levee construction indicates that much of the batture and landside portions of the study area were cleared and graded at that time (Figure 15).

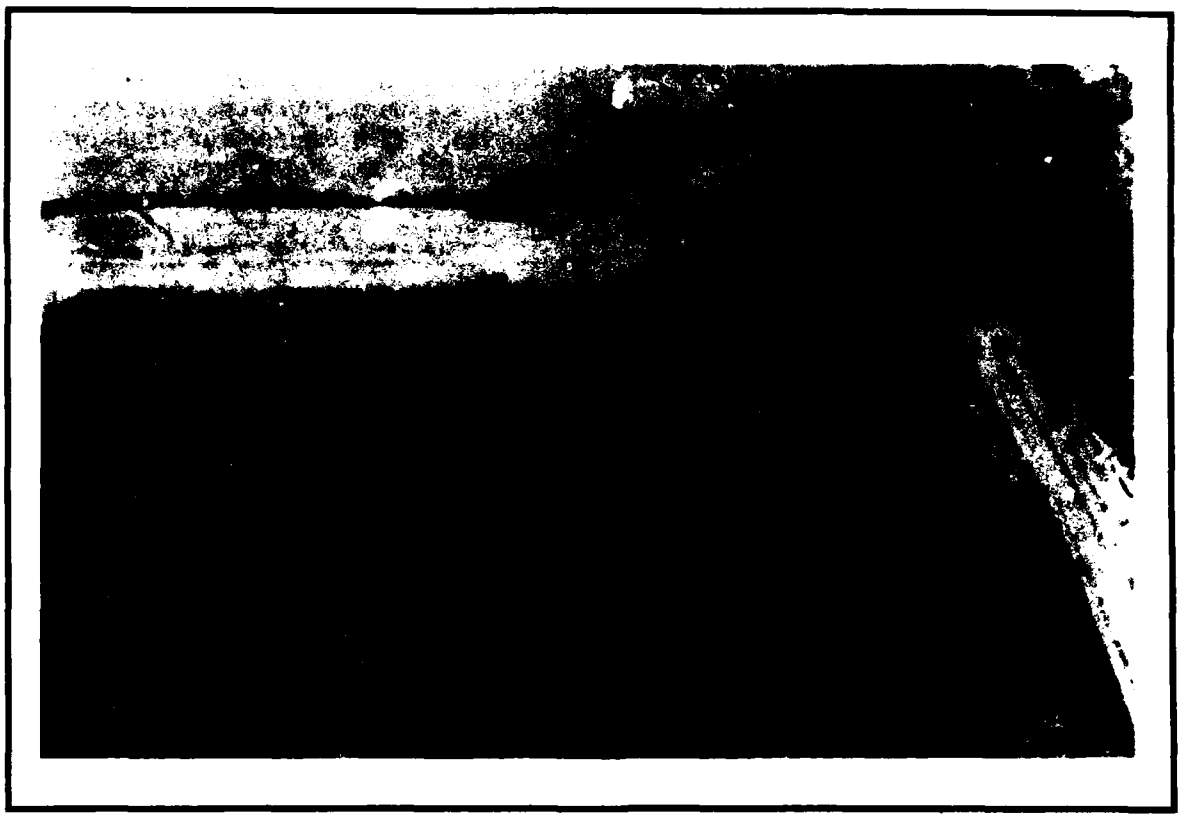

Figure 15. 1951 aerial photograph of the Avoca Plantation building complex (U.S. Army Corps of Engineers).

Test Excavations at Site 16 SMY 130

A topographic map of the portion of site 16 SMY 130 found within the levee right-of-way is shown in Figure 16. Aside from the existing levee, the only marked rises within the area are two spoil piles located along the batture of Bayou Shaffer.

Bankline Collection

Initial inspection of the study area indicated that the thick vegetation cover found throughout much of it would restrict surface collecting to the immediate bankline of Bayou Shaffer. There erosion had created an extensive beach deposit of historic and prehistoric artifacts. The bankline was divided into roughly 15 m segments using the lines run from the levee. The first 75 m of the northern end of the study area could not be collected as that area had been rip-rapped. Artifact densities in some collection units were extremely high, so no attempt was made to collect all the cultural material. Instead, one individual was assigned to each unit and allowed five minutes to collect a variety of chronologically or functionally significant artifacts.

Collections were obtained from 22 of the 35 units available, the remaining units having no exposed cultural material. Table 1 summarizes the artifact data by collection units, and Figure 17 illustrates the frequency of artifacts along the bankline. The distribution of brick, which was not collected, is shown separately in the figure.

The great majority of the 256 artifacts recovered were historic, including 109 ceramics, 74 glass, and 15 metal items. They occurred in four clusters along the bankline: S75-S105, S150-S285, S315-S375, and S390-S480. Most of the ceramics were of types which date to the middle or late-nineteenth century, predominantly decorated whitewares (see Table 1). They occurred in all of the clusters, but were most frequent in the areas from S75-S105, S180-S210, and S450-S465. Two examples of types which date to the late-eighteenth or early-nineteenth centuries were also found: a sherd of tin enameled redware from S90-S105 (Figure 18, a) and a sherd of pearlware from S165-S180. Other ceramic types such as stonewares were distributed more evenly among the clusters.

Three historic clay pipes were recovered in the bankline collection, one from S75-S90 and two from S180-S195. All three were of the detachable-stem type. The one from S75-S90 had a dark brown paste and was decorated by a band of dots around the stem socket (Figure 18, b).

One of the examples from S180-S195 was hexagonal in shape and with a light orange paste (Figure 18, c). The other was made of a light brown clay and molded in the shape of a human head (Figure 18, d). Pipes of these types date generally from the late-eighteenth through nineteenth centuries.

Glass bottles occurred in all of the artifact clusters, but the distribution of ones with dateable manufacturing techniques was more restricted. Bottles made with a lipping tool (ca. 1850-1913) and with an improved pontil (ca. 1840-1880) were most numerous from S150-S240 (see Table 1).

The distribution of the historic artifacts in general, and those dateable to the middle or late nineteenth century in particular, exhibits some correlation with the former locations of structures on the plantation. Specifically, the group of workers quarters that appeared in the 1912 photographs seem to be associated with the two northern clusters of artifacts, S75-S105 and S150-S210, which contained relatively high

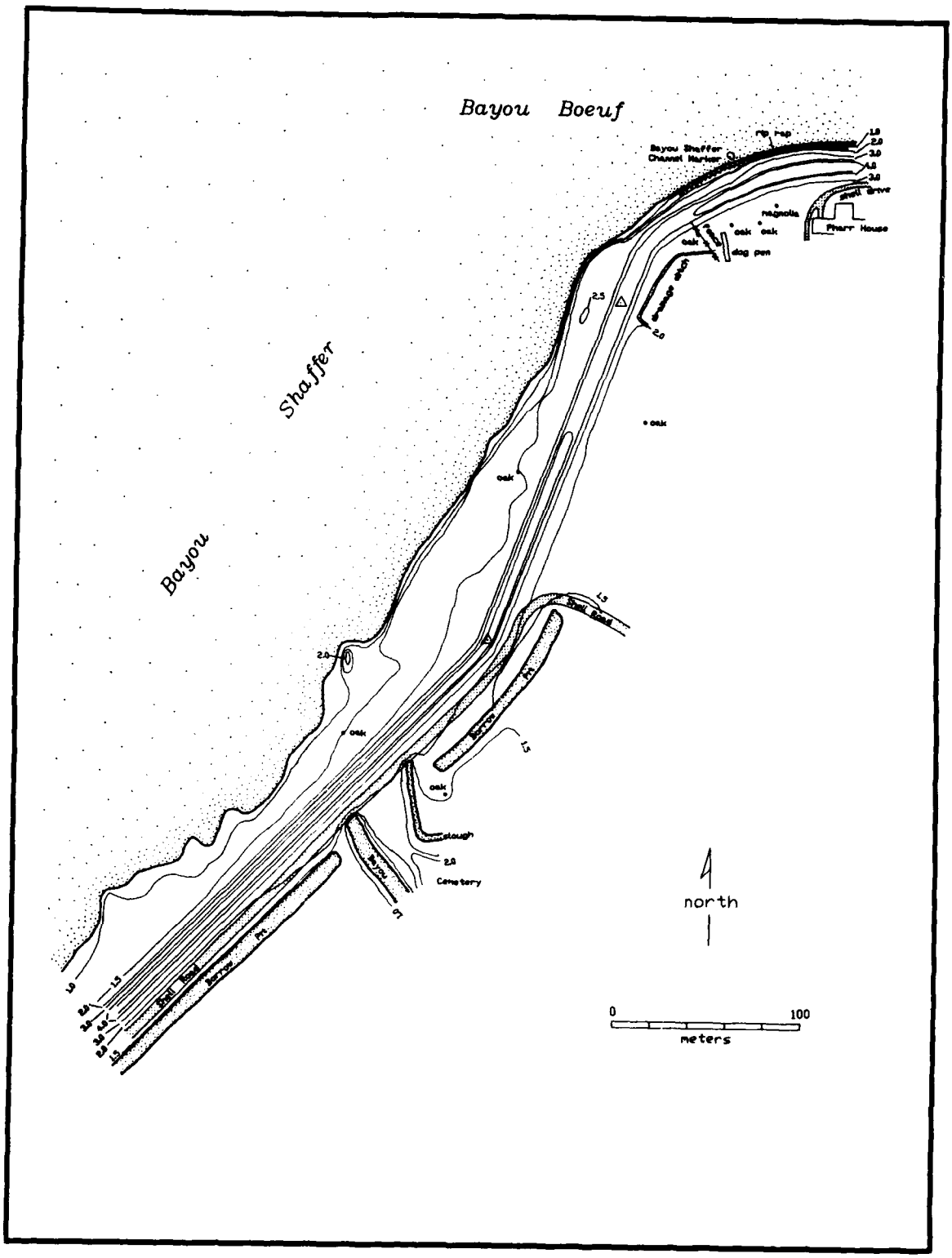

Figure 16. Topographic map of the levee right-of-way.

Table 1. Material Recovered in the Bankline Collection at 16 SMY 130.

	S75-90	S90-105	S150-165	S165-180	S180-195	S195-210	S210-225	S225-240	S240-255	S255-270	S270-285	S315-
CERAMICS												
PREHISTORIC												
Baytown Plain												
var. unspec. (B)	0	3	1	0	0	0	0	0	0	0	0	0
var. unspec. (R)	0	1	1	0	0	0	0	0	0	0	0	0
Owens Punctated												
var. McIlhenny (B)	0	0	0	0	0	0	0	0	0	0	0	0
Pottery anvil	0	0	0	0	0	0	0	0	0	0	1	0
HISTORIC												
Refined Earthenware												
Pearlware												
Unidentified vessel form												
hand painted												
blue	0	0	0	1	0	0	0	0	0	0	0	0
Whiteware												
Unidentified vessel form												
hand painted												
blue	0	2	0	0	1	0	0	0	0	0	0	0
polychromed	0	0	0	0	1	0	0	0	0	0	0	0
transfer-printed												
blue	1	0	0	0	0	0	0	0	0	0	0	0
flow blue	0	0	0	0	0	2	0	0	1	0	0	0
purple	0	0	0	0	0	0	1	0	0	0	0	0
red	0	0	0	0	0	0	0	0	1	0	0	0
shell-edged												
blue	1	1	0	1	1	1	0	0	0	0	0	0
green	0	0	0	1	0	0	0	0	0	0	0	0
annular												
blue	0	1	0	0	1	0	0	0	0	0	0	0
brown ,blue	0	0	0	0	0	0	0	0	0	0	0	0
annular (?)												
blue	0	0	0	0	0	1	0	0	0	0	0	0
sponged												
red	1	0	0	0	0	0	0	0	0	0	0	0
plain	1	6	0	2	3	1	1	1	0	0	1	1
Coarse Earthenware												
Redware												
Unidentified vessel form												
tin-enameled												
Rouen faience	0	1	0	0	0	0	0	0	0	0	0	0
Earthenware												
Unidentified	0	1	0	0	0	0	0	0	0	0	0	0
Yellowware												
Unidentified vessel form												
annular												
blue	0	0	0	0	1	0	0	0	0	0	0	0
blue, dendritic	0	0	0	0	0	0	0	0	0	0	0	0
brown	0	0	0	0	0	1	0	0	0	0	0	0
plain	1	0	0	0	2	0	0	0	0	0	0	0
Stoneware												
Unidentified vessel form												
salt glaze	3	0	0	3	0	5	1	0	0	0	1	1
alkaline glaze	0	2	0	1	3	2	1	0	0	1	0	1
unglazed	3	0	0	0	0	0	0	0	0	1	0	1
unidentified												
blue	4	0	0	0	0	0	0	0	0	0	0	0
Porcelain												
Unidentified vessel form												
transfer-printed												
blue	1	0	0	0	0	0	0	0	0	0	0	0
plain	0	1	0	0	0	0	0	0	0	0	0	0
Miscellaneous												
Porcelain button	0	0	0	0	0	0	0	0	0	0	0	0
Candlestick	0	0	0	1	0	0	0	0	0	0	0	1
Kiln waster												
Glazed, green	0	0	0	0	0	0	0	0	0	0	0	1
Tobacco pipe												
Snub stem	1	0	0	0	0	0	0	0	0	0	0	
Hexagonal	0	0	0	0	1	0	0	0	0	0	0	
Anthropomorphic head	0	0	0	0	1	0	0	0	0	0	0	
Terracotta drain pipe												
Glazed, red	0	0	0	0	0	0	0	1	0	0	0	
Tile												
Glazed, alkaline slip												
black	0	0	0	0	0	0	0	0	0	0	0	
red	1	1	0	0	0	0	0	0	0	0	0	
Unidentified	0	1	0	0	1	0	0	0	0	0	0	

at 16 SMY 130.

0-345	S345	210	S210-225	S225-240	S240-255	S255-270	S270-285	S315-330	S330-345	S345-360	S360-375	S390-405	S405-420	S420-435	S435-450	S450-465	S465-480	S555-570	TOTALS	% TOTAL
0			0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	7	2.73
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	1.17
0			0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.39
0			0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1.17
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0.78
0			0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	4	1.56
0			1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0.78
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1.95
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	1.17
0			0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	1.17
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			1	1	0	0	1	1	0	0	1	0	0	1	0	3	0	0	22	8.59
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0.78
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	1.56
0			1	0	0	0	1	1	0	0	0	1	0	1	0	6	0	2	24	9.38
0			1	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	13	5.08
0			0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	6	2.34
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1.56
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0.78
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0			0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0.78
0			0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	5	1.95
0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.78

Table 1 concluded.

	S75-90	S90-105	S150-165	S165-180	S180-195	S195-210	S210-225	S225-240	S240-255	S255-270	S270-285	S315-3
GLASS												
Bottle												
Machine-made												
clear	0	1	0	0	1	0	0	0	0	0	0	0
purple	0	0	0	0	0	1	0	0	0	0	0	0
Mold-made												
clear	3	0	0	0	0	0	0	0	0	0	0	0
blue	1	0	0	0	0	0	0	0	0	0	0	0
amber	1	0	0	0	0	0	0	0	0	0	0	0
"Duraglas"	1	0	0	0	0	0	0	0	0	0	0	0
"PATD AUG.24/1886/13"	1	0	0	0	0	0	0	0	0	0	0	0
"McCORMICK & CO"etc.	1	0	0	0	0	0	0	0	0	0	0	0
Mold-made and lipping tooled												
clear	1	0	2	1	0	1	0	0	0	0	0	0
light green	0	0	0	0	0	0	0	1	0	0	0	0
Unidentified manufacturing tech.												
clear	0	1	0	3	0	0	0	0	0	0	0	0
blue	1	0	0	0	0	0	0	0	0	0	0	0
light blue	0	0	0	0	0	0	0	0	0	1	0	0
green	0	0	0	0	0	1	0	0	0	0	1	0
light green	0	0	0	0	0	0	0	0	0	0	0	0
pink	0	0	0	0	0	0	0	0	0	0	0	0
dark green	0	2	0	1	0	0	1	0	0	1	0	0
"DYOTTVILLE GLASSWORKS..."	0	0	0	0	0	0	1	0	0	0	0	0
amber	0	0	0	0	1	1	1	0	0	0	0	0
white	1	0	0	0	0	0	0	0	0	0	0	0
Improved pontil base												
dark green	0	0	0	2	5	0	0	0	0	0	0	0
Jar												
light blue	0	0	0	0	0	0	0	0	1	0	0	0
Canning jar lid												
light blue	0	0	0	0	0	0	0	0	1	0	0	0
white												
"BOYD'S/GE..."	0	1	0	0	0	0	0	0	0	0	0	0
Bowl												
pink	0	0	0	0	0	0	0	1	0	0	0	0
amber	0	0	0	0	0	0	0	1	0	0	0	0
Serving Vessel												
blue	0	0	0	0	0	0	0	0	0	1	0	0
Tumbler												
Mold-made												
clear	1	0	0	0	0	0	0	0	0	0	0	0
Goblet												
Pressed												
clear	0	0	0	0	2	0	0	0	0	0	0	0
Vase												
white	0	0	0	0	0	0	1	0	0	0	0	0
Lamp shade												
white, crimped	1	0	0	0	0	0	0	0	0	0	0	0
Lamp base												
pink	0	0	0	0	0	1	0	0	0	0	0	0
Unidentified												
white	0	1	0	0	0	0	0	0	0	0	0	0
light blue	0	0	0	0	1	0	0	0	0	0	0	0
METAL												
Iron												
Nail												
square	0	0	0	0	0	0	0	0	0	0	0	0
Spigot	0	0	0	0	0	0	0	0	0	0	0	1
Chain	0	0	0	1	0	0	0	0	0	0	0	0
Pot leg	0	0	0	0	1	0	0	0	0	0	0	0
Knife handle	0	0	0	0	0	0	1	0	0	0	0	0
Hoe fragment	0	0	0	0	0	0	0	0	0	0	0	0
Railroad Spike												
square	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified	2	0	0	0	0	2	1	1	0	0	0	0
MISCELLANEOUS												
Spark plug	0	0	0	0	0	0	0	0	1	0	0	0
Fish net weight, ston-	0	0	0	0	0	0	0	0	0	0	0	0
Concretion, iron/cement	0	0	0	0	0	0	0	0	1	0	0	0
BONE												
Mammal												
Cow												
tooth	0	0	0	0	3	0	0	0	0	0	0	0
Unidentified	3	4	1	0	0	0	1	1	1	1	0	0
Reptile												
Alligator												
mandible	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified	0	0	0	0	2	5	0	0	0	1	0	0
COLUMN TOTALS	35	31	5	18	32	25	11	7	7	7	4	7

.345	S34[illegible]	S210-225	S225-240	S240-255	S255-270	S270-285	S315-330	S330-345	S345-360	S360-375	S390-405	S405-420	S420-435	S435-450	S450-465	S465-480	S555-570	TOTALS	% TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.78
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1.17
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
[illegible]	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	6	2.34
[illegible]	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
[illegible]	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	7	2.73
[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	1.17
[illegible]	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	3	1.17
[illegible]	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0.78
[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.39
[illegible]	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0.39
[illegible]	0	1	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	9	3.52
[illegible]	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
[illegible]	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	5	1.95
[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	8	3.13
0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0.78
0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.78
0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.39
0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0.78
0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	7	2.73
0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1.17
0	1	1	1	1	1	0	0	0	1	0	0	0	0	1	0	0	0	14	5.47
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.39
0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	8	3.13
2	9	11	7	7	7	4	7	2	8	2	4	4	2	5	31	5	2	256	100.00

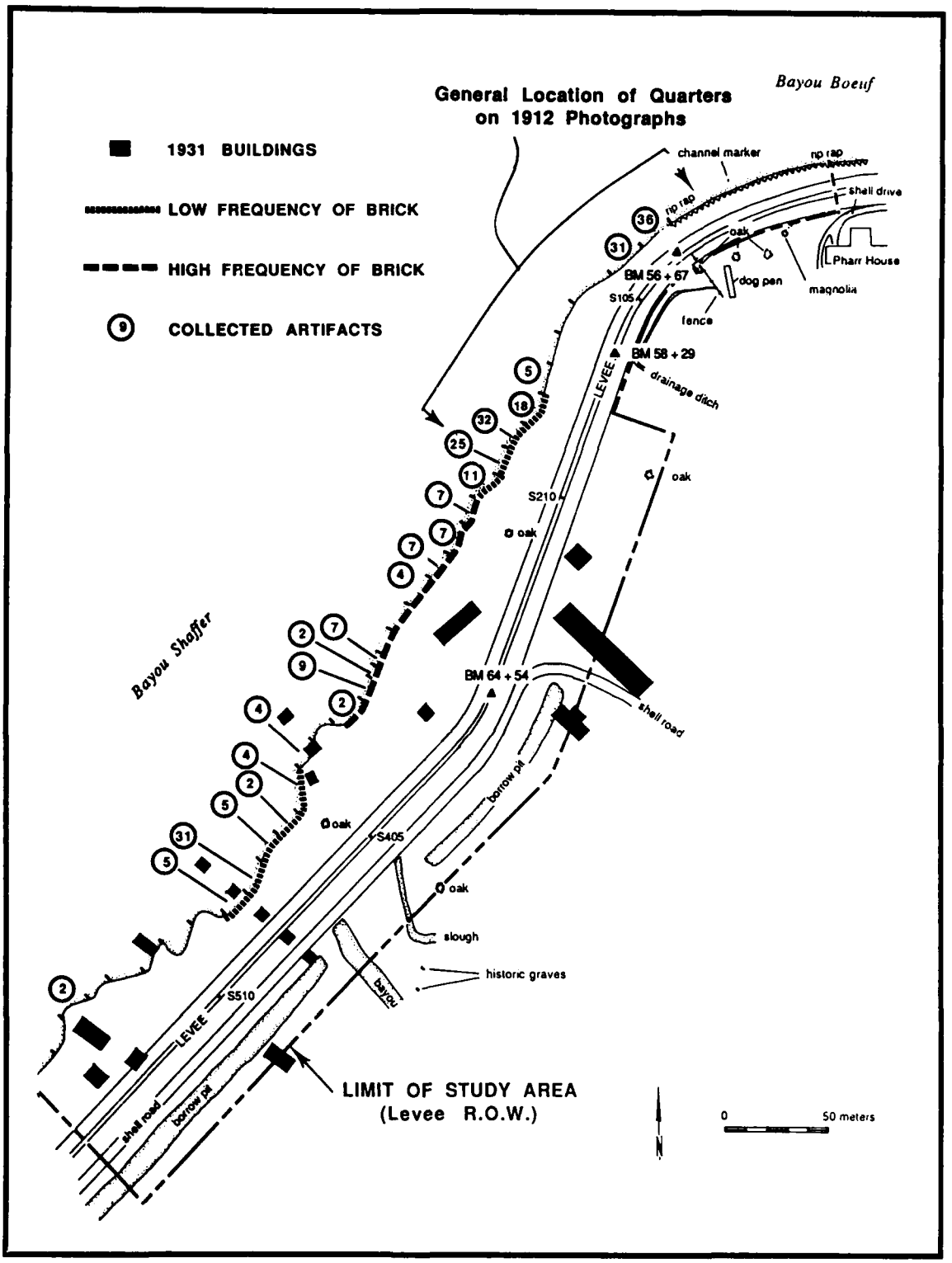

Figure 17. Map of the levee right-of-way showing results of the controlled surface collection.

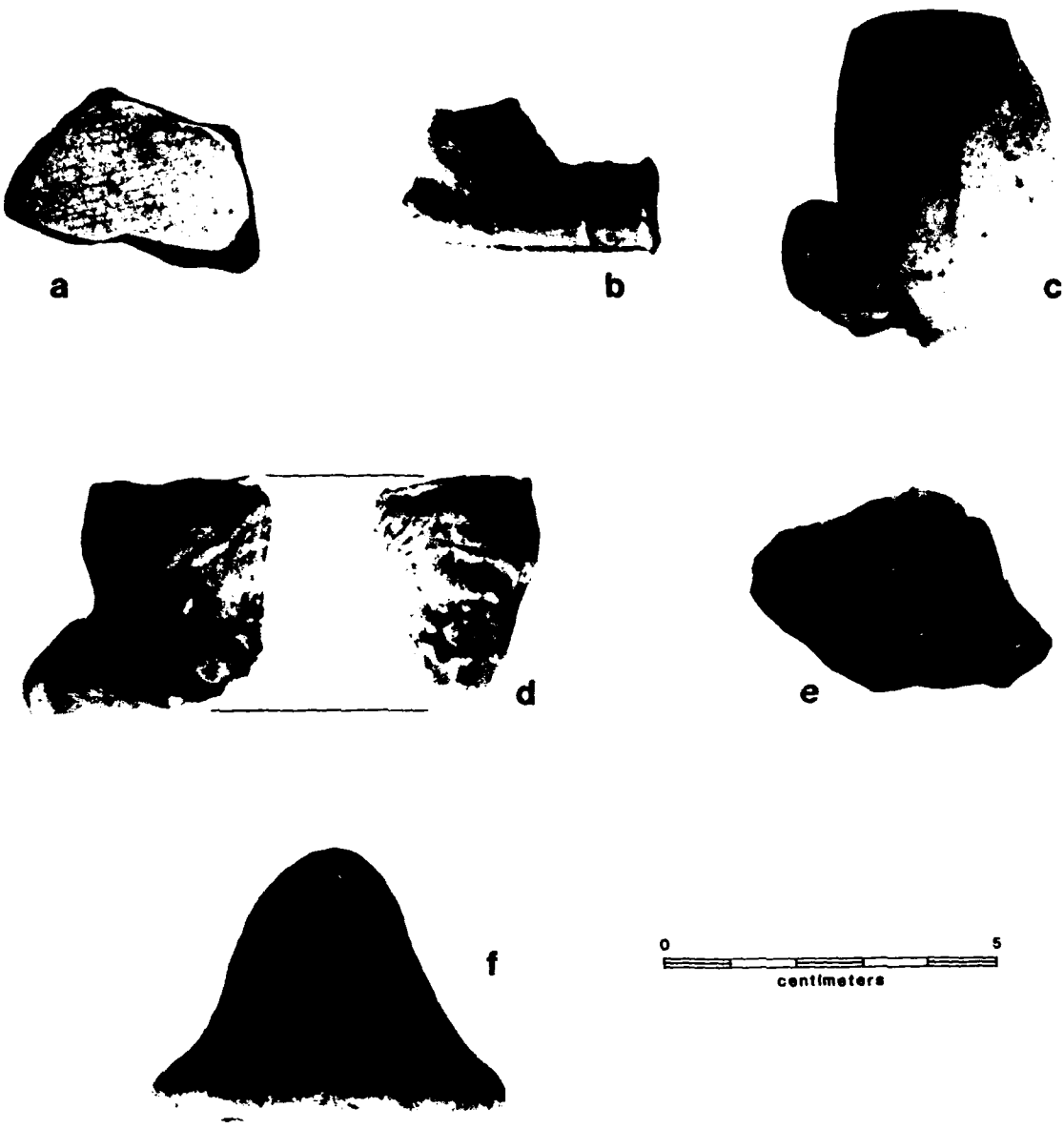

Figure 18. Artifacts recovered in the bankline collection at 16 SMY 130. a) Rouen faience, S90–105; b) Pipe bowl fragment, S75–90; c) Hexagonal pipe, S180–195; d) Anthropomorphic pipe, S180–195; e) Owens Punctated, var. unspecified, S450–465; f) Pottery anvil, S270–285.

frequencies of refined earthenware, stoneware, and bottle glass. The third cluster from S315-S375 may be related to a structure shown on the 1931 aerial photograph, but this is less certain. The fourth cluster, and particularly the high frequency of artifacts from S450-S465, is almost certainly associated with a row of houses appearing on that photograph.

Other building locations produced few or no artifacts, which may be due in part to their functions or possibly to disturbance from levee construction during the 1950s. For example, the bankline from S270-S300 in the vicinity of a large mule barn shown on the 1931 aerial photograph yielded few domestic artifacts, but high densities of bricks. Much of this brick, including several large foundation pieces, may have come from the sugar mill which was located in this area during the nineteenth century. The locations of the cane shed and wharf from S375-S405 and of several unidentified service buildings from S510-S525 and S555-S585 also produced few or no artifacts.

A small number of prehistoric artifacts, including eleven sherds and one ceramic potter's anvil, were also recovered. Ten of the sherds were examples of Baytown Plain, three being rims and the remainder body sherds. The one decorated sherd was a body sherd of Owens Punctated, var. McIlhenny, a late Mississippi period type (Figure 18, e). The potter's anvil is made on Baytown paste, and is apparently not common in the Louisiana coastal zone (Figure 18, f).

The distribution of the prehistoric artifacts appears to be closely related to the natural landforms present within the study area. One cluster occurred at the northern end of the area on the higher and better-drained natural levees of the relict Teche-Mississippi course occupied by Bayou Boeuf. A second group was found in the southern portion of the study area (S435-S480), where a small bayou (probably a relict crevasse channel) emanates from Bayou Shaffer.

Systematic Subsurface Testing

One hundred and thirty shovel and auger tests were excavated during the initial testing, and their locations are shown in Figure 19. Table 2 presents information on the artifacts and faunal remains recovered from the tests. In some instances the presence of material, such as brick fragments or mollusc shells was simply noted, and they were not retained.

The majority of the cultural material encountered in the subsurface tests was located on both sides of the levee between S165 and S255. The material found west of the levee occurred in a dark grayish-brown (10 YR 4/2) sandy silt matrix which in some places was exposed at the surface, but in others was buried as much as 25 cm below the surface. This stratum varied from 10 cm to 25 cm in thickness, and historic artifacts were distributed throughout it. With one exception the few dateable artifacts ranged in age from the middle-nineteenth through early twentieth centuries. The exception was a sherd of creamware, which probably dates to the late eighteenth century. Examination of the bankline of Bayou Shaffer suggests that this stratum is the source of most of the cultural material which is forming the beach deposit in this area. The distribution of artifacts in the surface collection units from this portion of the site seems to support this. In general, this deposit appears to be an extensive sheet midden. Several factors, including the size of the deposit, its coarse texture, and the presence of occasional water-worn artifacts in it, suggest that this material was redeposited, probably during levee construction in the 1950s.

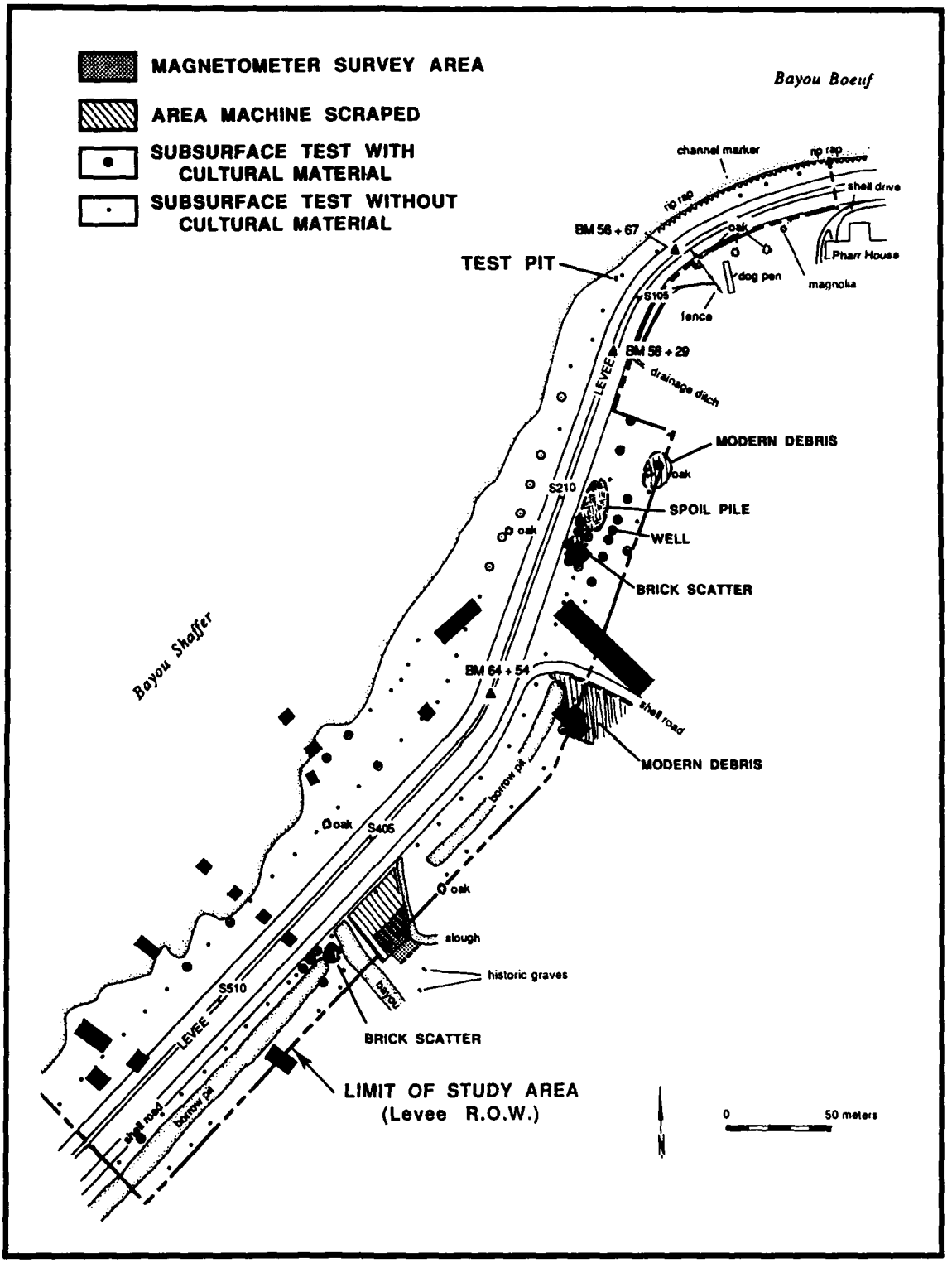

Figure 19. **Map of the levee right-of-way showing results of the systematic subsurface testing, and the location of the test excavation unit, magnetometer survey area and area machine-scraped.**

Table 2. Material Recovered During the Systematic Subsurface Testing at 16 SMY 130.

	S165W15	S180E40	S195W15	S205E32	S215E30	S220E15	S225E15	S225-E20	S225E40	S240E15	S240E30	S375W20	S460E26	S470E22	S470E32	S510W20	TOTALS	% TOTAL
CERAMICS																		
HISTORIC																		
Refined Earthenware																		
Creamware																		
Unidentified vessel form																		
plain	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.56
Whiteware																		
Unidentified vessel form																		
shell-edged	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.56
plain	1	0	0	0	1	0	1	1	0	0	1	0	1	1	0	0	7	10.94
Stoneware																		
Unidentified vessel form																		
unglazed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1.56
GLASS																		
Bottle																		
Unidentified manufacturing tech.																		
dark green	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.56
Unidentified																		
clear	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3.13
clear and orange carnival glass	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.56
light blue carnival glass	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.56
light blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1.56
pink	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.56
white	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.56
METAL																		
Iron																		
Bale handle	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1.56
Can	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	3.13
Hinge	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1.56
Railroad spike	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.56
Nail																		
unidentified	5	0	0	1	1	0	1	4	0	0	1	0	0	0	0	1	14	21.88
Unidentified	0	2	0	0	0	0	0	1	1	0	1	0	0	2	1	0	6	9.38
BRICK	1	0	1	2	0	3	0	3	0	0	0	0	0	0	0	1	11	17.19
COAL																		
Unburned	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	4	6.25
SHELL																		
Oyster	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	3.13
Clam	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4.69
BONE																		
Mammal																		
Unidentified	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.56
COLUMN TOTALS	13	5	5	5	3	6	2	8	1	1	3	2	1	3	1	4	64	100.00

The cultural material found east of the levee between S165 and S250 generally occurred in the upper 20 cm of a dark gray (10 YR 4/1) to brown (10 YR 4/3) silty clay. Most of the artifacts encountered were fragments of brick or small pieces of metal, but a few ceramics were also present. All of the latter were whiteware: one sherd with a blue shell edge decoration, the others plain. A surface scatter of bricks was present between S225 E15 and S240 E15, and an iron-lined well was located at S220 E30. These features, plus the artifacts encountered in shovel tests in this vicinity, appear to correlate with the location of a house shown on the 1931 aerial photograph. Conversations with George Picou indicate that this was the residence of the Pharrs' plantation manager, his father. With the exception of the well, the cultural material in this area was apparently extensively disturbed during levee construction. A large spoil pile was present just north of the former location of the house, and no intact trash deposits or structural remains could be identified. Artifacts may be present within the fill of the well, but this could not be determined, as it held water.

Another cluster of cultural material was found in shovel tests from S375 to S390 west of the levee. Like the more northerly deposit on this side of the levee, the artifacts occurred in a sandy silt matrix which extended from the surface to a maximum depth of 35 cm. Some of the material was again water-worn, suggesting that it had been redeposited. The two subsurface finds located south of there at S480 and S510 represent a similar situation, but in this case the matrix was a silty clay.

East of the levee cultural material was encountered in a series of shovel tests between S455 and S470. Brick, shell, small fragments of metal, and two sherds of plain whiteware occurred in a sandy clay matrix which extended from the surface to a depth of 36 cm. Immediately east of there at the north end of a borrow pit a scatter of bricks was present on the surface. These finds appear to be associated with one of a row of houses shown on the 1931 aerial photograph. The area was apparently disturbed by levee construction and borrow pit excavation, as no intact trash deposits or features could be identified. The other locations of subsurface cultural material east of the levee at S315 E40 and S585 E20, represent finds of modern debris.

Test Unit S105W13

After completion of the systematic subsurface testing a 1 m by 2 m test excavation unit was opened over what appeared to be a historic feature eroding from the bankline of Bayou Shaffer at S105W13 (levee station 57+45) (see Figure 19). Figure 20 shows the feature during excavation, and Figure 21 presents a profile of the south wall of the completed excavation unit. Table 3 summarizes information on the artifacts and faunal remains recovered from it.

The uppermost horizon in the excavation unit was a thin humus zone which contained small quantities of historic artifacts, predominantly bottle and brick fragments, and two prehistoric artifacts: a body sherd of Marksville incised and a body sherd of Baytown Plain. This zone was underlain by a brown (10 YR 5/3) silty sand deposit which varied from 15 cm to 25 cm in thickness. Like the humus zone it contained relatively low frequencies of historic artifacts and a few prehistoric sherds, in this case five body sherds of Baytown Plain. Beneath this stratum lay two roughly 10-cm-thick deposits of sandy silt, the upper a dark brown (10 YR 3/3) and the lower a mottled grayish-brown (10 YR 5/2). They contained even lower frequencies of historic artifacts than the two preceding strata, and exhibited a complete lack of prehistoric artifacts. With the exception of the humus zone, the upper 50 cm of sediments appear to represent recent alluvial deposits which contain reworked prehistoric and historic artifacts.

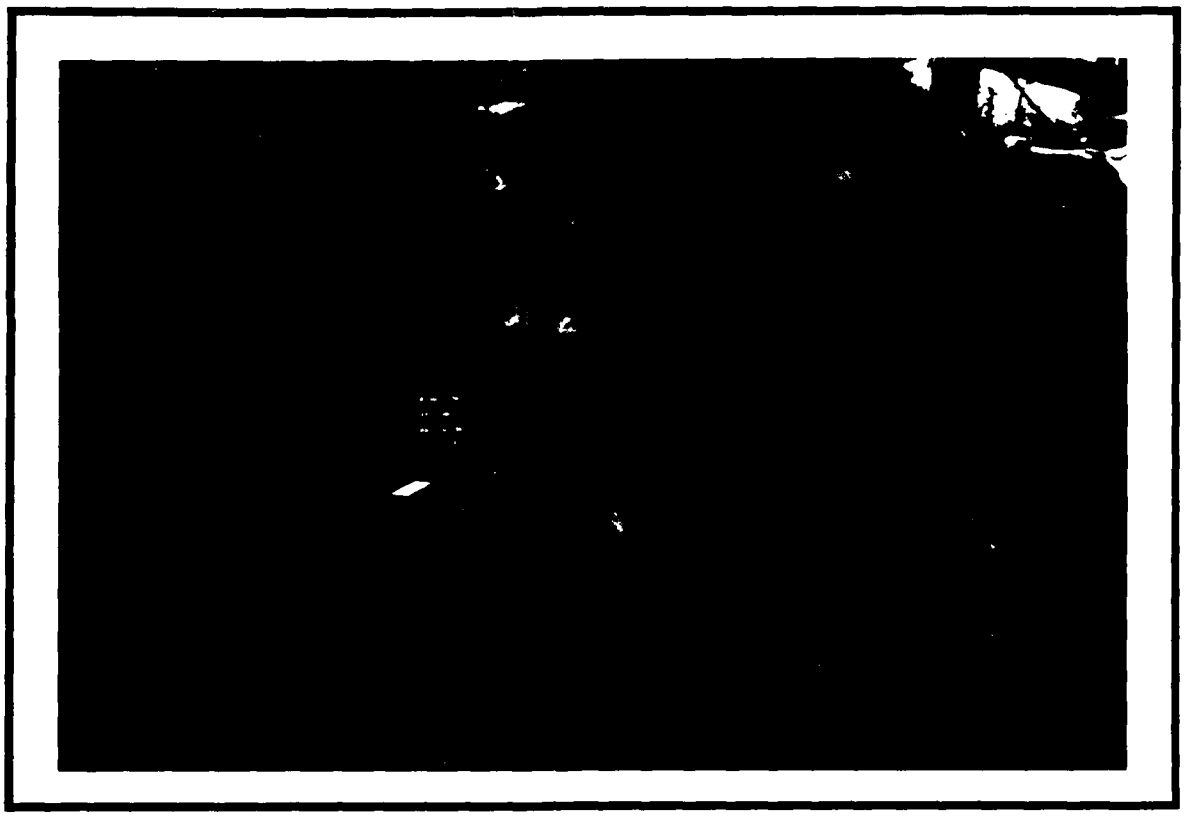

Figure 20. Test unit S105W13 during excavation. The dark area in the central portion of the unit is the trash deposit within the historic feature.

At about 50 cm below the surface the upper portion of a dark gray (10 YR 4/1) sandy silt stratum containing large numbers of historic artifacts was encountered. This deposit was 15 cm to 20 cm thick at the southern edge of the excavation, and a thin ash lens was present at its base. However, within the unit this stratum dipped sharply to the north into a roughly circular depression. The limits of the depression were defined by a partially collapsed circular brick wall which appears to represent the remains of a brick-lined well. This is the feature that was observed eroding from the bank of the bayou. The artifact-laden stratum is interpreted as a sheet midden deposit which extended into the abandoned well. No dateable makers' marks or embossed bottles were recovered, but the ceramics suggest a middle to late nineteenth century age (Figure 22). Faunal preservation within this deposit was excellent, and, although the collection is small, the frequency of wild mammal remains was notable (see Table 3).

The well and the historic trash deposit within it continued for an unknown depth beyond the point at which excavation was halted. The grayish-brown (10 YR 5/2) clayey silt deposit which extends downward from the trash deposit in the south wall profile appears to represent natural filling within the abandoned well. Surrounding the well and underlying the trash deposit outside of it was a thick stratum of yellowish-brown (10 YR 5/6) sandy silt. This stratum contained few or no historic artifacts, and is interpreted as an undisturbed natural levee deposit. Present within it were small

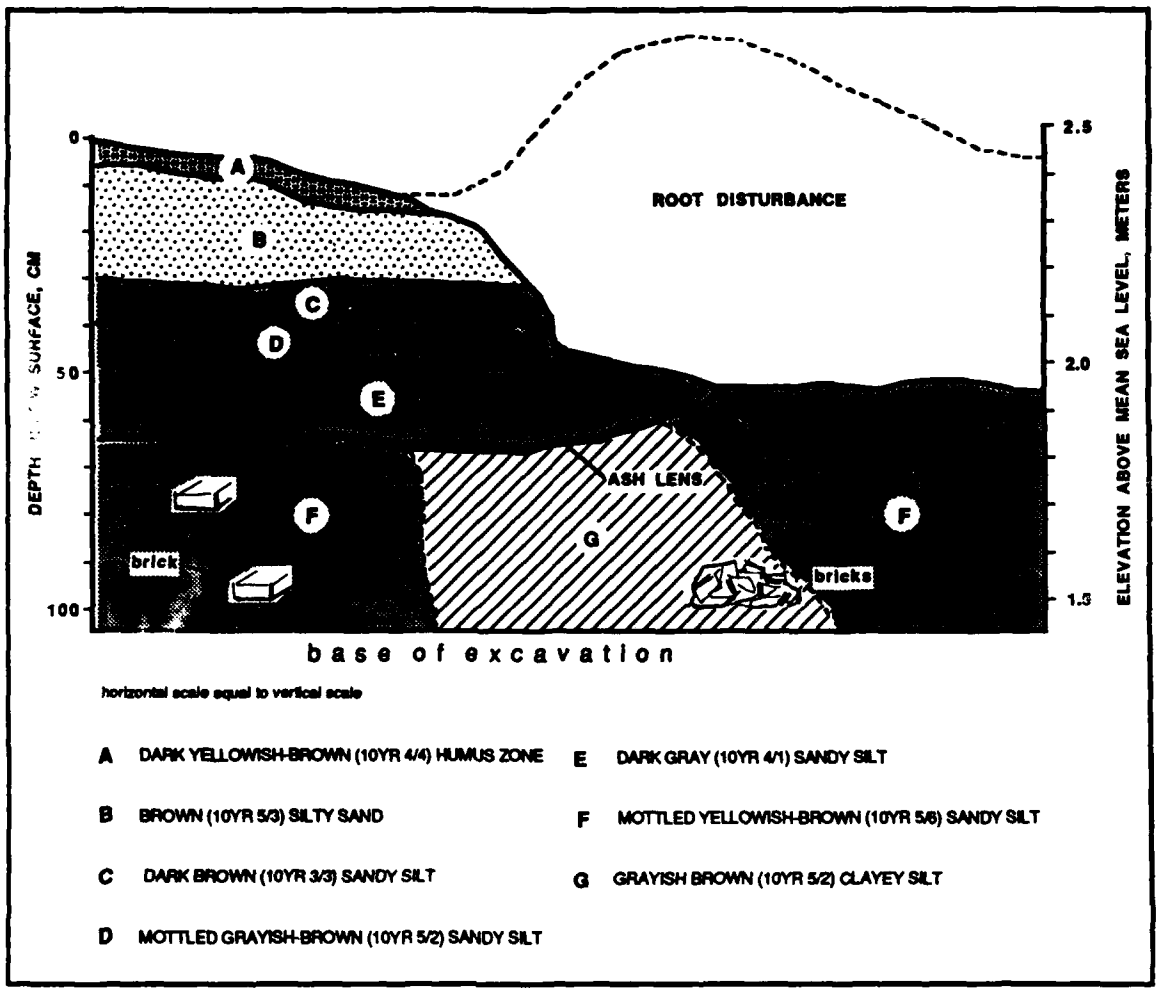

Figure 21. Profile of the south wall of test unit S105W13 at 16 SMY 130.

numbers of prehistoric artifacts, including sherds of Cracker Road Incised, Plaquemine Brushed, Mississippi Plain and Baytown Plain. This assemblage suggests that a Mississippi period occupation is present beneath the historic component in this portion of the site.

In summary, the test excavation unit encountered approximately 50 cm of recent alluvial deposits overlying an intact historic feature and trash deposit. The latter may be associated with one of the worker's quarters shown in this area on the 1912 panoramic photograph. Beneath the historic remains were natural levee deposits containing evidence of a Mississippi period occupation.

Magnetometer Survey and Machine Scraping

Prior to the initiation of fieldwork, the wife of the property manager for Avoca, Inc., Mrs. George Picou, informed us that historic graves were present near the southern portion of the study area. Surface examination of the area encountered one intact

Table 3. Material Recovered from Test Unit S105W13 at 16 SMY 130.

	0-10cm	10-20cm	20-30cm	30-40cm	40-50cm	50-60cm	60-70cm	70-80cm	80-90cm	90-100cm	TOTALS	% TOTAL
CERAMICS												
PREHISTORIC												
Baytown Plain												
var. unspecified (B)	1	2	3	3	0	0	0	3	3	5	20	0.92
Cracker Road Incised												
var. unspecified (B)	0	0	0	0	0	0	0	0	0	1	1	0.05
Fatherland Incised												
var. unspecified (R)	0	0	0	0	0	1	0	0	0	0	1	0.05
Marksville Incised												
var. unspecified (B)	1	0	0	0	0	0	0	0	0	0	1	0.05
Mississippi Plain												
var. unspecified (B)	0	0	0	0	0	0	0	0	1	0	1	0.05
Plaquemine Brushed												
var. unspecified (B)	0	0	0	0	0	0	0	0	0	2	2	0.09
HISTORIC												
Refined Earthenware												
Whiteware												
Hollowware												
hand painted												
blue	0	0	0	0	0	0	1	1	1	0	3	0.14
polychromed	0	0	0	0	0	0	1	2	2	1	6	0.28
transfer-printed												
blue	0	0	0	0	0	0	0	0	1	0	1	0.05
red	0	0	0	0	0	0	2	0	0	1	3	0.14
annular	0	0	0	0	0	0	1	0	2	0	3	0.14
shell-edged												
blue	0	0	0	0	0	0	1	0	0	0	1	0.05
plain	0	0	0	0	0	3	0	0	0	1	4	0.18
Flatware												
transfer-printed												
blue	0	0	1	0	0	0	0	0	0	0	1	0.05
brown	0	0	0	0	0	0	0	1	0	0	1	0.05
polychromed	0	0	0	0	0	0	0	0	1	0	1	0.05
plain	0	0	1	1	0	0	0	2	1	0	5	0.23
Unidentified vessel form												
hand painted												
blue	0	0	0	0	0	0	0	1	0	0	1	0.05
polychromed	0	0	0	0	0	0	1	0	0	0	1	0.05
red w/black transfer print	0	0	0	0	0	1	0	0	0	0	1	0.05
transfer-printed												
blue	0	0	0	0	0	2	0	0	0	0	2	0.09
brown	0	0	0	0	0	0	0	0	0	0		
black	0	0	0	0	0	2	0	0	0	0	2	0.09
purple	0	1	0	0	0	0	0	0	0	0	1	0.05
red	0	0	0	0	0	1	0	0	0	0	1	0.05
shell-edged												
blue	0	0	0	0	0	0	0	0	3	0	3	0.14
annular	0	0	0	0	0	2	0	1	1	0	4	0.18
plain	1	4	1	1	1	6	6	3	12	1	36	1.66
unidentified, burned	0	0	0	0	0	0	2	0	0	0	2	0.09
Coarse Earthenware												
Redware												
Unidentified vessel form												
unglazed	1	0	0	0	0	0	0	0	0	0	1	0.05
lead glazed	0	2	0	0	0	0	0	0	0	0	2	0.09

Table 3 continued.

	0-10cm	10-20cm	20-30cm	30-40cm	40-50cm	50-60cm	60-70cm	70-80cm	80-90cm	90-100cm	TOTALS	% TOTAL
CERAMICS												
HISTORIC												
Yellowware												
Hollowware												
annular	0	0	0	0	0	0	0	3	2	0	5	0.23
plain	0	0	0	0	0	1	0	0	0	0	1	0.05
Unidentified vessel form												
annular	0	0	0	0	0	0	0	2	0	0	2	0.09
Stoneware												
Hollowware												
salt glazed	0	0	0	0	1	1	1	1	0	0	4	0.18
Porcelain												
Hollowware												
plain	0	0	0	0	0	0	0	0	1	0	1	0.05
Flatware												
molded	0	0	0	1	0	0	0	0	0	0	1	0.05
Semi-Porcelain												
Hollowware												
plain	0	0	0	0	0	0	8	2	0	0	10	0.46
Unidentified vessel form												
plain	0	0	0	0	0	3	1	0	0	0	4	0.18
Miscellaneous												
Plain clay marble	0	0	0	0	0	0	0	1	0	0	1	0.05
Hand painted marble	0	0	0	0	0	1	0	0	0	0	1	0.05
Porcelain button	0	0	0	0	0	1	0	0	0	0	1	0.05
Tobacco pipe, bowl	0	0	0	0	0	0	0	2	0	0	2	0.09
Tile, white	1	0	0	0	0	0	0	0	0	0	1	0.05
GLASS												
Bottle												
Machine-made												
amber	1	0	0	0	0	0	0	0	0	0	1	0.05
Mold-made and lipping tooled												
clear	0	0	0	0	0	0	0	0	1	0	1	0.05
Pressed												
clear	0	0	1	0	0	0	0	0	0	0	1	0.05
Unidentified manufacturig tech.												
clear	8	12	14	0	0	8	3	0	4	2	51	2.35
blue	0	1	0	2	0	0	0	0	0	0	3	0.14
aqua	0	0	0	0	0	0	2	0	0	0	2	0.09
aqua, burned	0	0	0	0	0	1	0	0	0	0	1	0.05
green	4	0	2	2	0	0	0	6	0	0	14	0.64
lt. green	0	0	0	0	0	0	3	0	0	0	3	0.14
blue-green	0	0	0	0	1	0	0	0	0	0	1	0.05
pink	0	0	0	1	0	0	0	0	0	0	1	0.05
dark green	0	0	0	0	1	3	16	12	20	0	52	2.39
amber	2	6	9	3	0	5	8	0	0	0	35	1.61
white	1	0	0	0	0	0	0	0	0	0	1	0.05
Flat												0.00
Window	0	0	0	0	0	2	3	0	0	0	5	0.23
Unidentified	0	1	0	0	0	0	0	0	0	0	1	0.05

Table 3 continued.

	0-10cm	10-20cm	20-30cm	30-40cm	40-50cm	50-60cm	60-70cm	70-80cm	80-90cm	90-100cm	TOTALS	% TOTAL
METAL												
Iron												
Nail												
square	0	0	0	0	0	3	20	19	30	20	92	4.23
unidentified	0	1	0	0	0	0	34	23	74	38	170	7.82
Tack												
square	0	0	0	0	0	0	0	1	0	0	1	0.05
Unidentified	6	8	9	3	2	47	6	30	25	30	166	7.64
Brass												
Kitchen Fork	0	0	0	0	0	0	0	0	1	0	1	0.05
BRICK	11	16	9	8	23	228	150	130	61	36	672	30.91
STONE												
Modified												
Unidentified	0	0	1	0	0	0	0	0	0	0	1	0.05
Unmodified												
Granite	0	0	0	0	0	0	0	0	0	4	4	0.18
Unidentified	10	31	12	2	3	0	0	2	3	0	63	2.90
MISCELLANEOUS												
Burned Clay	0	0	3	1	0	0	0	4	0	0	8	0.37
Bone Button	0	0	0	0	0	0	0	1	1	1	3	0.14
COAL												
Unburned	6	5	4	8	2	28	6	1	0	0	60	2.76
Slag	2	7	0	0	0	0	0	0	0	0	9	0.41
WOOD												
Charcoal	0	0	0	0	0	5	14	10	30	16	75	3.46
SHELL												
Oyster	3	3	4	3	0	5	12	15	48	0	93	4.28
Clam	0	0	4	6	1	0	0	0	0	0	11	0.51
Rangia	10	8	0	0	0	55	16	14	3	0	106	4.88
Snail	1	0	0	1	0	0	0	0	0	0	2	0.09
Unid.	0	0	0	0	0	0	18	60	0	0	78	3.59
BONE												
Mammal												
Cow												
tooth	0	0	0	0	0	0	1	0	1	6	8	0.37
ulna	0	0	0	0	0	0	0	0	1	0	1	0.05
humerus	0	0	0	0	0	0	0	0	0	1	1	0.05
vertebra	0	0	0	0	0	0	0	0	0	2	2	0.09
rib	0	0	0	0	0	2	0	0	2	4	8	0.37
scapula	0	0	0	0	0	0	0	0	1	1	2	0.09
tarsal	0	0	0	0	0	0	1	0	0	0	1	0.05
unidentified	0	0	0	0	0	0	0	5	0	0	5	0.23
Pig												
tooth	1	0	0	0	0	0	0	0	1	0	2	0.09
humerus	0	0	0	0	0	0	0	0	1	0	1	0.05
vertebra	0	0	0	0	0	0	1	0	0	2	3	0.14
scapula	0	0	0	0	0	0	1	0	0	0	1	0.05
tarsal	0	0	0	0	0	0	0	0	0	1	1	0.05

Table 3 concluded.

	0-10cm	10-20cm	20-30cm	30-40cm	40-50cm	50-60cm	60-70cm	70-80cm	80-90cm	90-100cm	TOTALS	% TOTAL
BONE												
Mammal												
Deer												
tooth	0	0	0	0	0	0	1	0	0	4	5	0.23
mandible	0	0	0	0	0	0	0	0	2	0	2	0.09
rib	0	0	0	0	0	0	0	0	1	1	2	0.09
metatarsal	0	0	0	0	0	0	0	0	1	0	1	0.05
Raccoon												
tooth	0	0	0	0	0	1	0	0	3	0	4	0.18
mandible	0	0	0	0	0	0	0	0	1	1	2	0.09
maxilla	0	0	0	0	0	0	0	0	1	0	1	0.05
ulna	0	0	0	0	0	0	0	0	0	1	1	0.05
Unidentified	0	1	0	0	0	4	24	38	22	44	133	6.12
Bird												
Chicken												
vertebra	0	0	1	0	0	1	0	0	0	0	2	0.09
Unidentified												
coracoid	0	0	0	0	0	0	0	0	0	1	1	0.05
unidentified	0	0	0	0	0	0	0	0	0	1	1	0.05
Fish												
Catfish												
pectoral spine	0	0	0	0	0	0	0	0	0	2	2	0.09
Gar												
scales	0	4	0	0	0	0	0	0	0	0	4	0.18
Unidentified												
vertebrae	0	0	0	0	0	0	0	2	3	4	9	0.41
dorsal spine	0	0	0	0	0	0	0	2	0	0	2	0.09
unidentified	0	0	0	0	0	0	0	0	2	2	4	0.18
Reptile												
Turtle												
carapace and plastron	0	0	0	0	0	4	0	1	0	0	5	0.23
Unidentified	2	1	0	0	0	0	5	0	7	8	23	1.06
COLUMN TOTALS	73	116	79	46	35	427	370	401	382	245	2174	100.00

Figure 22. Historic ceramics recovered from Test Unit S105W13 at 16 SMY 130. a) Black transfer-printed whiteware, 50-60 cm; b) Hand-painted and transfer-printed whiteware, 80-90 cm; c) Annular whiteware, 80-90 cm.

brick tomb and the remains of at least one more located 20 to 25 m southeast of the right-of-way (see Figure 19). The adjacent portion of the study area was then carefully examined, and the ground was systematically probed at 5-m intervals. When these two procedures failed to yield results, a magnetometer survey of the area was performed. The magnetometer used was a portable Geometrics G-816 model. A grid was established over the area which was tied to the larger study area grid. A series of magnetometer transects were then run at 2-m intervals across the area, and readings were taken at 1-m intervals along the transects. The sensor head for the instrument was set at approximately 25 cm above the ground. After the survey was completed, the data were brought to the laboratory in Baton Rouge and a computer program, Statview, was used to calculate a linear regression for the magnetic readings in order to remove the effect of diurnal change. The residuals from the linear regression were then plotted and contoured (Figure 23). Several anomalies were present within the area, some obviously associated with surface debris, but the sources of others could not be identified. A small tractor and a grader box were then used to remove the humus from an area which extended from the shell road to just beyond the levee right-of-way in an effort to identify grave shafts in the underlying subsoil. Thorough scraping of the area and probe and shovel testing of any possible features failed to identify any graves.

Additional Testing at 16 SMY 130

Changes in the project design made after the completion of the initial test excavations threatened to impact the area between levee stations 56+27 and 59+37 which contained the historic feature examined in Test Unit S105W13. In order to determine whether additional features or other intact cultural deposits were present in that area, further testing was conducted there. Five backhoe trenches were excavated in the cleared area adjacent to the levee and in openings in the woods, and six auger borings were placed in wooded portions of the right-of-way which could not be reached by the backhoe (Figure 24).

Auger Borings

The auger borings provided more information on the stratigraphy present in this area, but they were unable to identify additional intact cultural deposits. A stratigraphic profile based on the auger borings is shown in Figure 25. The uppermost deposits consisted of yellowish-brown (10YR 5/4 and 10YR 5/6) and brown (10YR 5/3) sandy silts and silty sands which represent recent flood deposits associated with the Atchafalaya River. In the first three borings their thickness varied considerably from

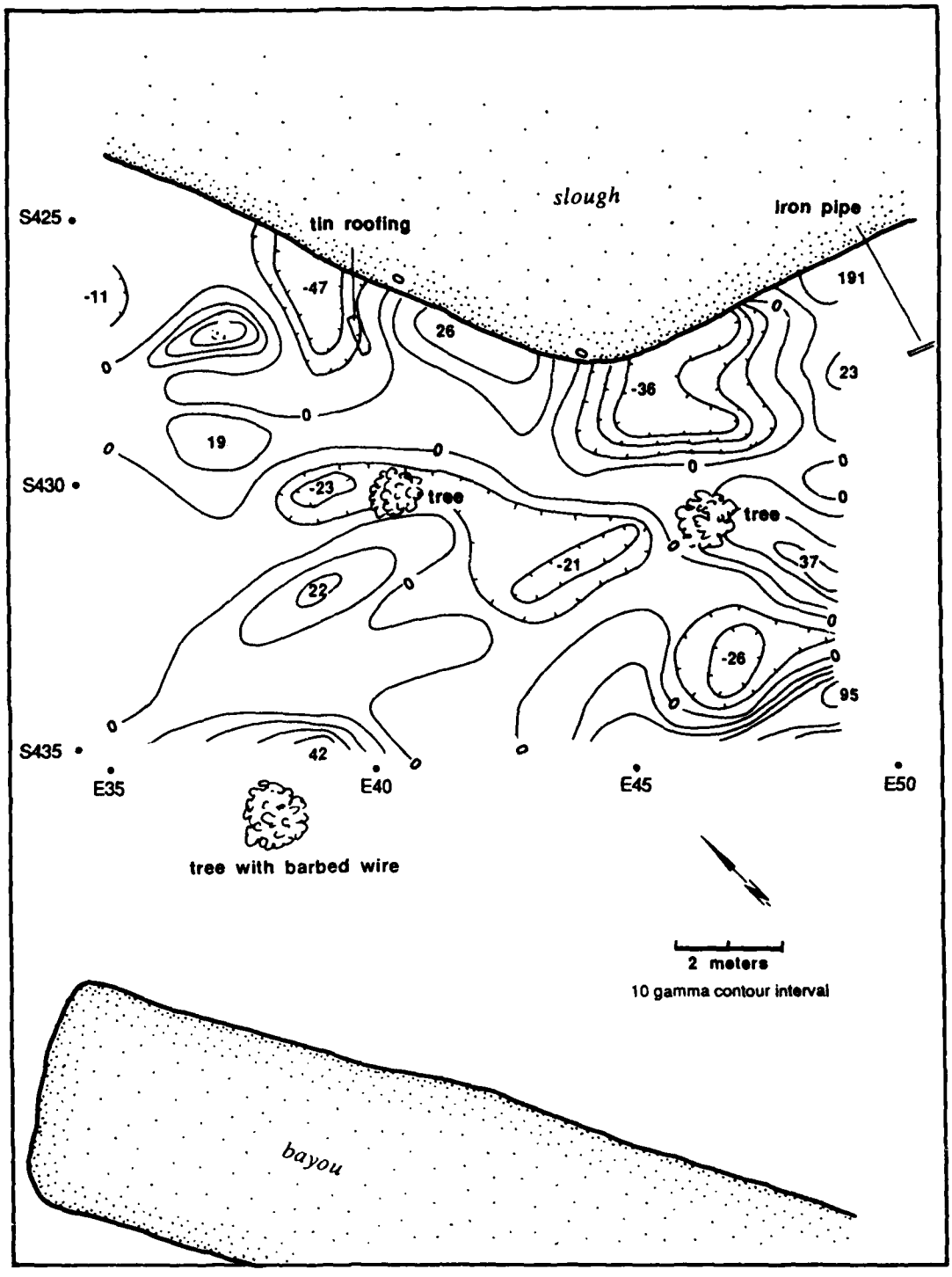

Figure 23. Contour map of data from magnetometer survey.

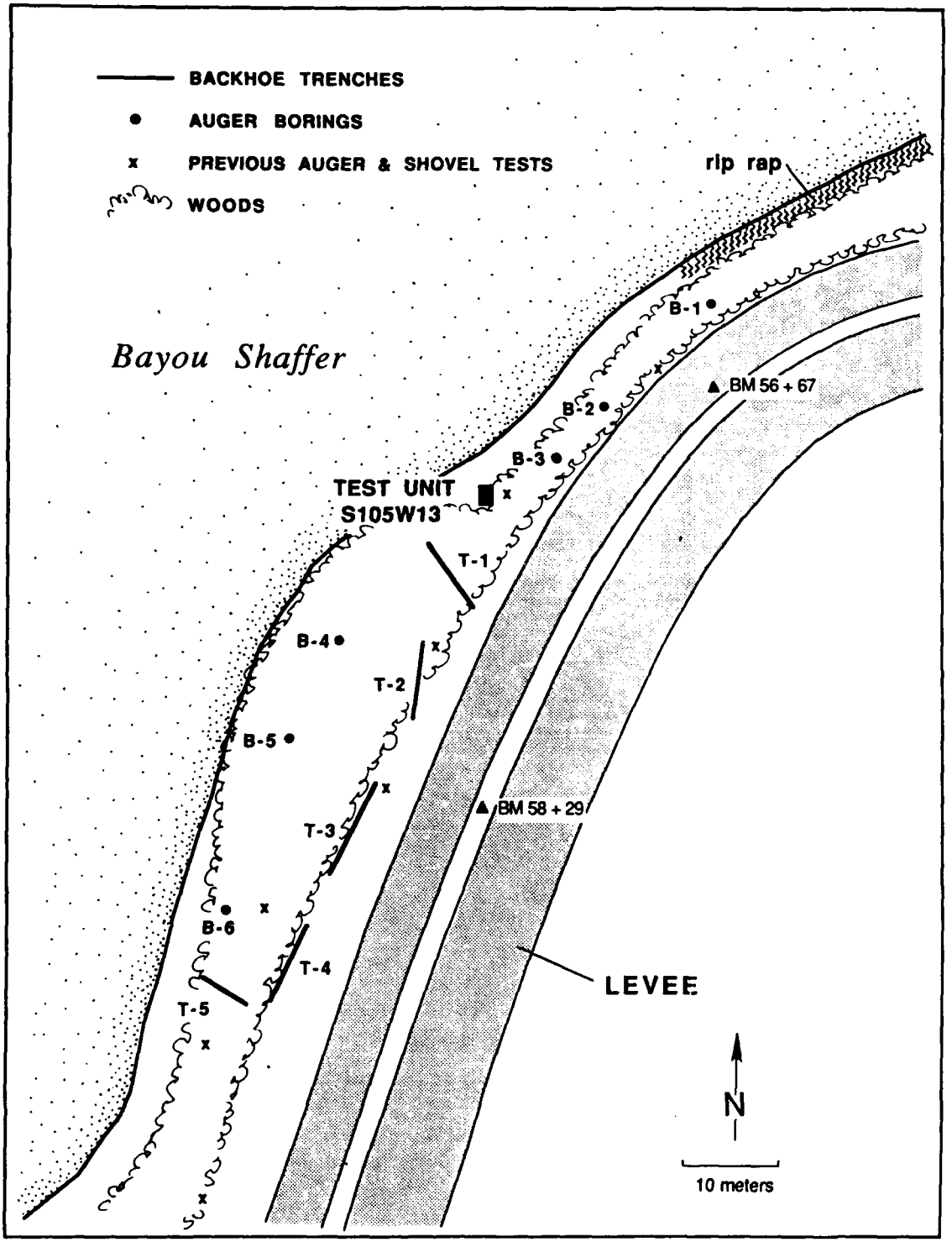

Figure 24. Enlargement of the area examined during the additional testing.

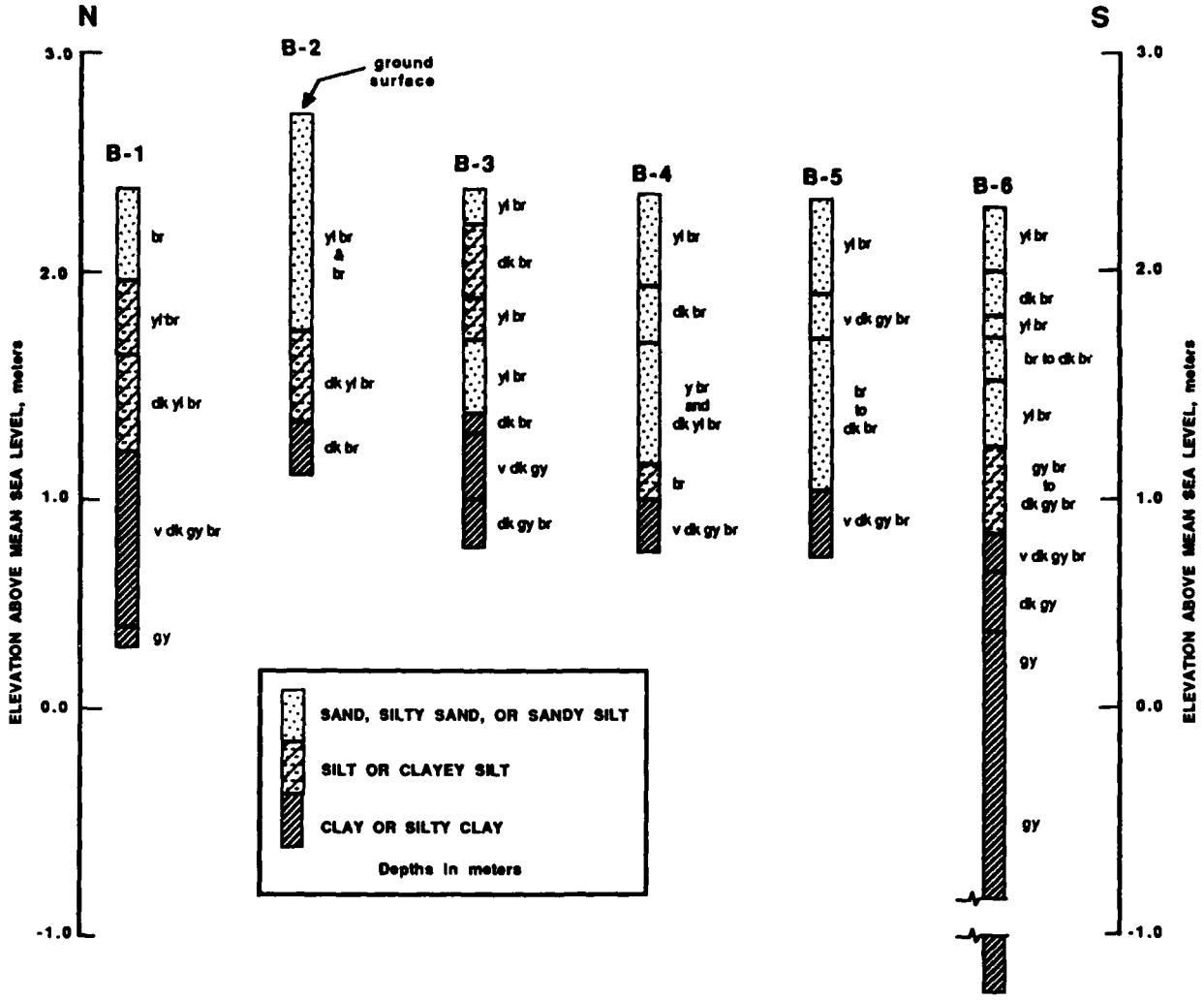

Figure 25. Profile based on additional auger borings within the levee right-of-way.

15 cm to 100 cm, and they were underlain by yellowish-brown, dark yellowish-brown (10YR 4/4) and dark brown (10YR 3/3), clayey silts and silts. The latter may represent slack-water overbank deposits, or they may be slope wash from the nearby artificial levee. In Borings 4, 5, and 6 the upper yellowish-brown sandy deposits were more uniform in thickness, and they were underlain by dark brown and very dark grayish-brown (10YR 3/2), sandy silts and silty sands which contained fragments of brick and metal. The latter appear to be part of the redeposited sheet midden noted in previous subsurface tests in this area. This stratum was underlain by additional sandy silts and silty sands which ranged in color from yellowish brown to dark brown. They were more consolidated than the uppermost deposits and may represent natural levee deposits associated with reoccupation of the abandoned Teche-Mississippi course by the Red River or the Lafourche-Mississippi. The basal deposit in all of the borings was a massive clay or silty clay which varied in color from dark brown and very dark grayish-brown in its upper portion to gray (10YR 5/1) and dark gray (10YR 4/1) beneath. Aside from the color change, the only variation noted within this stratum was the appearance of a lens of peat from 315 cm to 355 cm below the surface in Boring 6. In general, the stratum resembled a backswamp deposit, but its position within the relict Teche-Mississippi course now occupied by Bayou Boeuf suggests that it is more likely to represent abandoned channel fill.

Backhoe Trenches

The five backhoe trenches exhibited a stratigraphic sequence similar to that noted in Borings 4, 5 and 6 and provided more detail concerning the deposits. Figure 26 presents a profile of one of the trenches, Trench 3. A thin humus zone (Stratum A), unrecognized in the auger borings, overlay the fine sandy flood deposits (Stratum B). Beneath that was a dark grayish brown (10YR 4/2) sandy silt containing numerous small brick fragments and a variety of other artifacts in a mixed deposit (Stratum C). This is the redeposited historic sheet midden noted previously. It was resting on a mottled brown (10YR 5/3) fine sandy silt which graded downward into a silt (Stratum D). This is the stratum identified above as a natural levee formed within the abandoned Teche-Mississippi course by either the Red River or the Lafourche-Mississippi. Beneath it lay a dark gray (10YR 4/1) silty clay deposit followed by a light yellowish-brown (10YR 6/4) silty clay. The latter two strata have been identified as abandoned channel deposits which also formed within the Teche-Mississippi course.

Neither the backhoe trenches nor the auger borings encountered intact prehistoric or historic cultural material. The only artifacts observed occurred in a mixed historic sheet midden which is thought to be the product of extensive grading conducted prior to levee construction in the 1950s.

Conclusions

The results of the test excavations have provided substantial new information on site 16 SMY 130. The thin Rangia shell lens originally recorded at the site could not be relocated, but shells are present on the surface of the lower bank of Bayou Shaffer between levee stations 56+27 and 57+45. It is possible that the lens has been destroyed by erosion in the past 12 years, but based on the results of the test excavations it seems more likely that the shell lens represented historic fill, possibly a portion of a shell road. The aboriginal artifacts found on the lower bank in this area probably eroded from natural levee deposits underlying the historic fill. Several aboriginal occupations are apparently present at the site, but the current research provided evidence of a Marksville period component in the mixed upper levels of Test Unit S105W13 and a Mississippi period component in the natural levee deposits encountered in the lower levels of the unit.

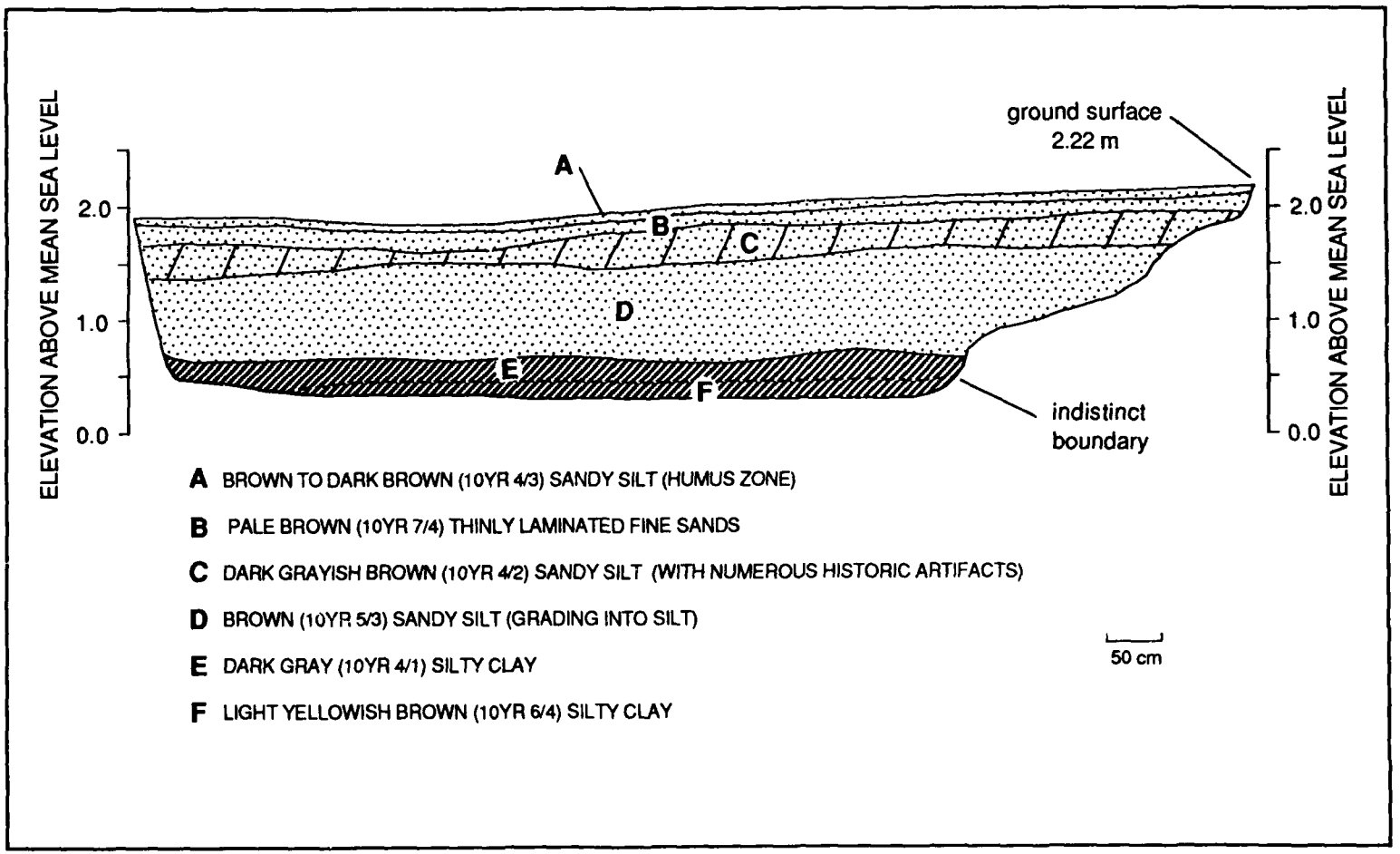

Figure 26. Profile of east wall of Backhoe Trench 3.

The historic occupation at the site is associated predominantly with a middle nineteenth through early twentieth century sugar plantation known as Avoca. Limited artifactual evidence was found of occupations during the late eighteenth or early nineteenth centuries, but no in situ remains could be identified from these periods. For the later periods of the plantation's history, cartographic and photographic data indicate that numerous structures, including workers' quarters and service buildings, were formerly located within the levee right-of-way. Much of this area appears to have been disturbed during construction of the present levee in the 1950s; however, an intact feature and associated trash deposit were encountered in Test Unit S105W13 near levee station 57+45. The feature, a well, was apparently associated with a group of workers' quarters shown in this location on a 1912 photograph of the plantation. The artifacts recovered from the feature suggest that it may date as early as the middle nineteenth century. Additional testing in this area failed to locate other features or undisturbed cultural deposits.

Survey of the Alternate Borrow Area

An intensive survey of the non-inundated portion of the alternate borrow area was performed by three personnel walking linear transects spaced 20 m apart. Shovel tests were excavated at 50-m intervals along each transect, and the fill from these tests was screened through 1/4-in wire mesh. The survey located five historic artifact scatters in the northern portion of the borrow area (Figure 27). They consisted of surface scatters of ceramics and glass with occasional concentrations of brick. The artifact scatters ranged in area from 375 m^2 to 875 m^2 and were situated 10 m to 25 m from one another. The brick concentrations, which appeared to represent chimney falls, were often centrally located, but one area, Locality 1, contained two and another area, Locality 4, had no brick at all. Subsurface tests excavated within these areas failed to locate either intact artifact deposits or features. Tables 4 through 8 list the material collected from the surface of each area. The majority of the dateable artifacts, predominantly embossed bottles, were manufactured during the 1910s and 1920s (Figure 28). Only one item, a sherd of whiteware from Locality 2, exhibited a maker's mark which dated prior to 1910.

Conclusions

The 1931 aerial photograph of this area shows a group of shotgun-type structures located in the northern portion of the borrow area and suggests that the artifact scatters represent the remains of workers' quarters associated with Avoca Plantation (see Figure 13) [For this reason they have been recorded as localities within 16 SMY 130, rather than as separate sites]. The houses were spaced approximately 50 m apart in rows oriented northeast-southwest. These structures represented the southernmost extension of the Avoca Plantation building complex, for beyond them there were only sugarcane fields.

The beginning and ending dates for the occupation of these houses are not known precisely, but can be estimated from several lines of evidence. Perhaps the most important of these is a panoramic photograph of the plantation dated 1912 which shows no structures in the borrow area (Pharr family papers). This piece of evidence, plus the dateable artifacts recovered from the area, suggests that the houses were built or moved there in the 1910s or early 1920s, when Avoca plantation was owned by J.N. Pharr and Sons, Ltd. By 1928 the Pharrs were in bankruptcy, and the plantation had become the property of one of their creditors, the Whitney Bank of New Orleans. Avoca apparently ceased to operate a sugar plantation at that time, and it is probable that occupation of the workers quarters also ended then. The absence of artifacts

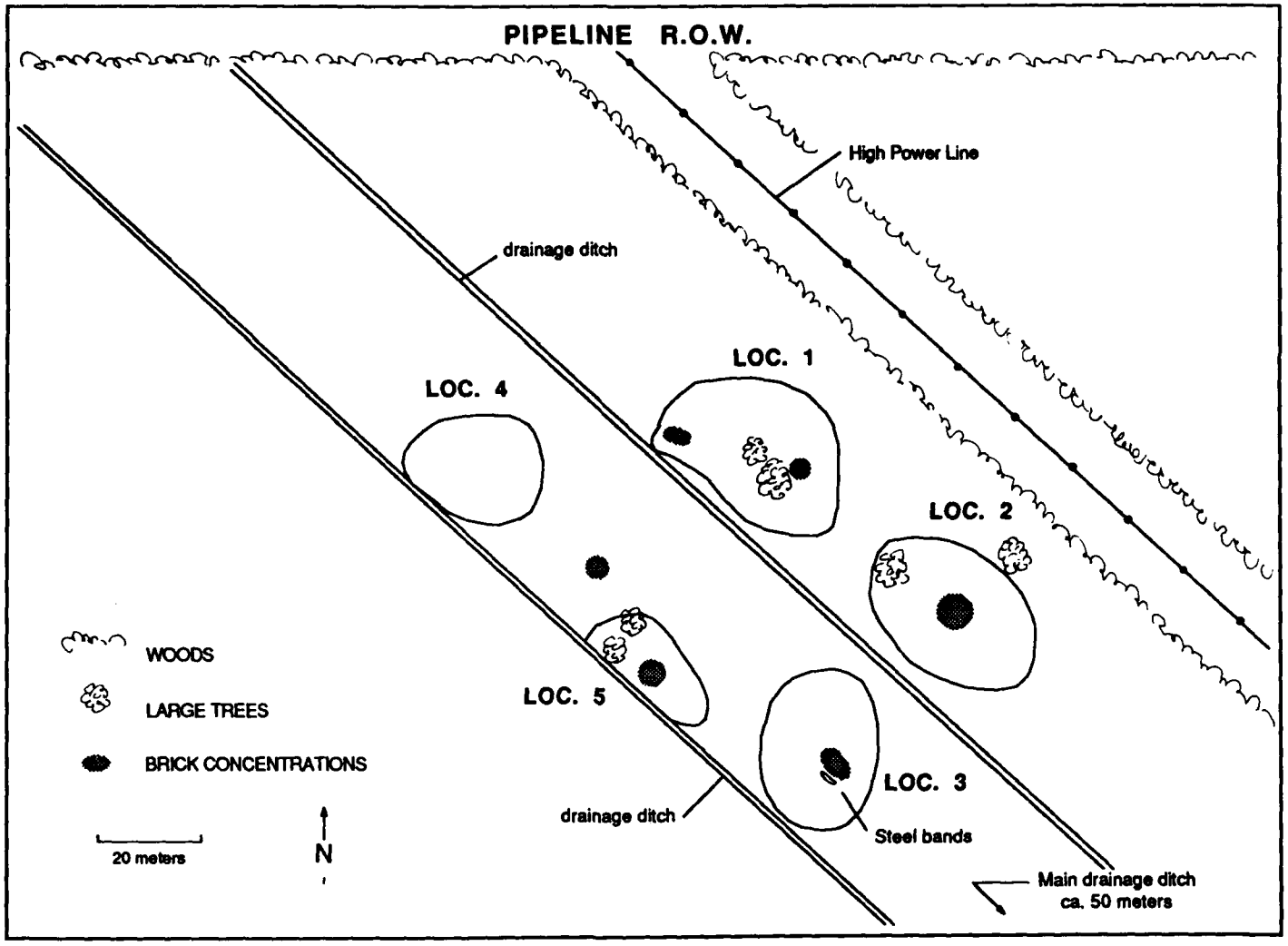

Figure 27. Sketch map showing the five historic artifact scatters located within the alternate borrow area.

Table 4. Material Collected from Locality 1.

CERAMIC	
WHITEWARE	
Hollowware	
Cup	
plain, three vessels	4
Flatware	
Plate	
plain, four vessels	5
Unknown	
plain	1
Hollowware	
Crack	
brown interior, clear exterior, salt glaze	1
GLASS	
BOTTLE	
Storage	
Olive Oil	
machine-made, embossed mark of Owens Bottle Co., used 1911-1929 (Toulouse 1971:393), clear	1
Pickle/preserve jar	
machine-made, embossed mark of Lygart Valley Glass Co., used 1910-1925 (Toulouse 1971:500), clear	1
Liquor	
Brandy flask	
machine-made, embossed mark of Owens Bottle Co., used 1911-1929 (Toulouse 1971:393), clear	1
Wine jug	
machine-made, brown	1
Soda	
Soda	
machine-made, embossed "Quality Soda Water," bottled by Mancuso Bros., Morgan City, La., clear	1
machine-made, embossed "Lonoke Bottling Works," clear blue	1
Medicine	
Patent Medicine	
machine-made, embossed mark of Illinois Glass Co., used 1916-1929 (Toulouse 1971:264) clear	1
machine-made, clear green	1
Unidentified	
Unidentified	
machine-made, embossed mark of Hart Glass Manufacturing Co., used 1918-1938 (Toulouse 1971:232), clear, one vessel	2
machine-made, clear blue	1
unknown, clear green	1
unknown, clear purple	1
unknown, clear brown	1
FLAT	
Window	
Clear Blue	1
CLOTHING	
Button	
White, 4-hole	1
BRICK	1
OYSTER	1

Table 5. Material Collected from Locality 2.

CERAMIC	
WHITEWARE	
Hollowware	
Cup	
plain	2
Unknown	
plain	1
Flatware	
Plate	
fugitive decal	3
plain	3
Saucer	
fugitive decal	1
Unknown	
plain, painted green maker's mark of Clyde Pottery, Co., used ca. 1850-1903 (Godden 1964:154)	2
plain	4
IRONSTONE	
Hollowware	
Small bowl	
plain	2
PORCELAIN	
Hollowware	
Cup	
plain	3
Small Bowl	
plain	1
Sugar Bowl (?)	
plain	1
Flatware	
Unknown	
plain	1
GLASS	
BOTTLE	
Storage	
Canning Jars	
machine-made, clear blue	1
machine-made, clear purple	1
lid, milk glass	1
Medicine	
Patent medicine	
machine-made, embossed mark of Owens Bottle Co., used 1911-1929 (Toulouse 1971:393), clear	1
Unidentified	
Unidentified	
machine-made, brown	1
machine-made, clear	1
JAR	
Cosmetics	
Cold Cream Jar	
lid, milk glass	1
Medicine	
Jars	
machine-made, mentholatum jar, cobalt blue	1
MISC.	
Furniture	
Lamp base	
pressed, clear purple	1

Table 6. Material Collected from Locality 3.

CERAMIC	
WHITEWARE	
Hollowware	
Unknown	
plain	1
Unidentified	
Unknown	
plain	1
IRONSTONE	
Hollowware	
Bowl(?)	
plain	1
STONEWARE	
Hollowware	
Jug	
brown interior and exterior, salt glaze	4
GLASS	
BOTTLE	
Liquor	
Brandy Flask	
machine-made, clear	1
Medicine	
Patent Medicine	
machine-made, embossed "Caldwell's Syrup Pepsin, manufactured by Pepsin Syrup Co., Monticello, Ill.," bottles of this type made ca. 1903-1942 (Fike 1987:5, 224), clear blue	1
machine-made, graduated double scale, clear	1
Unidentified	
Unidentified	
machine-made, embossed mark of Owens Bottle Co., used 1911-1929 (Toulouse 1971:393), clear	1
machine-made, clear green	1

with dateable marks from the 1930s or 1940s seems to support such an interpretation. As noted previously, the structures were still standing in 1931, but it is unclear how much longer they remained intact. By 1951 they were gone and the area was being reclaimed by the forest (USACE 1951a).

The Initial Borrow Area

History of Land Ownership and Use

The earliest records of ownership of land in the initial borrow area are clouded by a controversy which raged throughout the first half of the nineteenth century and may never be completely resolved. The controversy concerned the ownership of several Spanish land grants in this area. The property in question was apparently initially granted to Francois Flores by Spanish Governor Galvez in 1777 (Lowrie and Franklin 1834:581). It had a front 40 arpents wide along Bayou Boeuf and a depth of 40 arpents. Beyond this information, however, there is no evidence that Flores ever occupied the land. In 1819 the Cathcart expedition found a Dutchman, John Henry,

Table 7. Material Collected from Locality 4.

CERAMIC	
WHITEWARE	
Hollowware	
Cup	
plain	1
Unknown	
plain	3
Flatware	
Plate	
plain	4
Saucer	
plain, two vessels	3
Unknown	
sponged blue, red and green	1
plain	6
Unidentified	
Unknown	
plain	7
IRONSTONE	
Hollowware	
Wash basin	
plain	1
Unknown	
plain	1
Flatware	
Unknown	
plain	1
Unidentified	
Unknown	
plain	1
PORCELAIN	
Hollowware	
Cup	
fugitive paint	4
Unknown	
fugitive paint and painted green and orange	1
Flatware	
Unknown	
plain	2
STONEWARE	
Hollowware	
Jug	
brown interior and exterior, salt glaze	1
Crock/Jug	
brown interior, white exterior, salt glaze	1
Unknown	
white interior and exterior, salt glaze	1
GLASS	
BOTTLE	
Storage	
Canning Jar	
machine-made, clear	1
lid, clear blue	2
Soda	
Soda	
machine-made, embossed "Quality Soda Water" bottled by Mancuso Bros., Morgan City, Louisiana, clear green	1
machine-made, embossed "Port-O," embossed mark of Illinois Pacific Glass Co., used 1902-1925 or Illinois Pacific Glass Corp., used 1925-1930 (Toulouse 1971:268), clear	1
Medicine	
Patent Medicine	
machine-made, clear	1
JAR	
Cosmetics	
Cold Cream Jar	
milk glass	1
MISC.	
Furniture	
Lamp Base	
pressed, milk glass	3
Unknown	
pressed, milk glass	1

Table 8. Material Collected from Locality 5.

CERAMIC	
WHITEWARE	
Hollowware	
Pitcher	
plain	1
Unknown	
plain	1
Flatware	
Unknown	
plain	4
Unidentified	
Unknown	
plain	6
IRONSTONE	
Hollowware	
Unknown	
plain	1
PORCELAIN	
Hollowware	
Unknown	
gilted	1
Flatware	
Saucer	
plain	2
Misc.	
Doll leg	
painted green shoe	1
STONEWARE	
Hollowware	
Crock	
brown interior, white exterior, salt glaze, one vessel	2
GLASS	
BOTTLE	
Storage	
Canning Jar	
machine-made, clear	1
Liquor	
Beer Bottle	
machine-made, clear blue	1
Wine	
unknown, olive	1
Soda	
Soda	
machine-made (?), embossed, Coca-Cola Bottling Co., bottled in Morgan City, La., bottles of this type made 1899–1916 (Munsey 1970:105, 106, 110), clear	1
Medicine	
Patent Medicine	
machine-made, clear	1
Unidentified	
Unknown	
machine-made, clear	1
unknown, clear	1
JAR	
Cosmetics	
Cold Cream Jar	
unknown, milk glass	1

Figure 28. Bottles recovered from workers' quarters localities at 16 SMY 130. a) Quality Soda Water, Locality 1; b) Lonoke Bottling Works, Locality 1; c) 2 oz. liquor flask, Locality 1; d) Coca-Cola Bottling Company, Locality 5.

and his son-in-law, Alexander Grassier or Grosure, living in this vicinity (Prichard et al. 1945:791; Newton:1985:64). Henry filed a claim for this land with the United States government in 1812, but it was disallowed on the grounds that he could not prove occupancy prior to December 20, 1803 (Lowrie 1834:365). Several years later Robert Martin, a resident of Rapides Parish, filed a claim for the tract granted to Francois Flores, arguing that he had purchased the property from Flores (Lowrie and Franklin 1834:581). Questions were raised regarding the authenticity of Martin's claim (Dickens and Forney 1860:436), but it was confirmed by an act of Congress in 1823. More problems arose later when another individual, the legendary Jim Bowie, claimed to have purchased the same property from Flores. Bowie's claims, and those of individuals who had purchased from him, were ultimately rejected by the U.S. Surveyor General's Office in the middle-nineteenth century. Apparently these problems with the title to the land significantly delayed development of the property. Robert Martin sold the tract to William C.C.C. Martin of Avoyelles Parish shortly after it was confirmed to him in 1823, but the sale was not recorded until 1847 (C.O.B. G-6116). The relationship of the two Martins is unknown, but both appear to have been land speculators who were only interested in making a profit from the sale of the property.

In 1849 William C.C.C. Martin sold the land to Dr. R.B. McKay (C.O.B. I-7355), and for the first time there is evidence of development of the tract. The sugar records for 1849-50 list Dr. McKay, and indicate that while he did not produce a crop that year he would make one the next season (Champomier 1850:43). His production in 1850-51 was relatively small, 50 hogsheads, but it was by no means the smallest in that area. The records for that year also note that Dr. McKay operated a horse-powered sugar mill on the plantation (Champomier 1851:35). Over the next several years he gradually increased sugar production, probably by clearing additional land. His largest crop was 110 hogsheads in 1854-55 (Champomier 1855:33). Like his neighbors, Dr. McKay suffered a terrible year in 1856-57, due primarily to a hurricane which struck the parish in August (Champomier 1857:vii). Although the sugar records for the following season indicate that he was able to produce a sizeable crop in that year, apparently his losses were too great, for in 1857 Dr. McKay sold the plantation to Dr. John A. Tarleton (C.O.B. L-9061).

Dr. Tarleton was a native of South Carolina who came to Belle Isle in the early 1840s and began growing sugarcane there. Later in that decade he moved to the north side of Bayou Boeuf near its junction with Bayou Chene. Prior to purchasing the McKay plantation, he had recently bought the property west of it, which contained a steam-powered mill. After 1857-58 the production of the latter two properties was combined in the sugar records (Champomier 1859:33). With the addition of these two plantations to his property on the north side of Bayou Boeuf, Dr. Tarleton became one of the largest sugar producers in the region. The 1864 Confederate map of this area shows his three plantations, and, more importantly, it indicates the location of the building complex on the former McKay property (see Figure 7). The structures were arranged in a linear fashion along the natural levee south of Bayou Boeuf and directly across from the mouth of Bayou Ramos. The plantation house was located at the northwestern end of this complex and the sugar mill at the southeastern end. This sugar mill may be the horse-powered mill built by Dr. McKay, or possibly a later one added by Dr. Tarleton.

In 1866 Dr. Tarleton leased the McKay plantation to his son, John B. Tarleton, but the senior Tarleton appears to have retained ownership up until the time of his death. John B. Tarleton inherited the property from his father and continued to operate the plantation until 1890 when he sold it to Borue O'Brien, a descendant of one of the first families to settle in the Morgan City area. In that same year, O'Brien sold a one-

quarter interest in the plantation to Oscar M. Zenor (C.O.B. Z-18579). Zenor, like the O'Brien family, was a large landowner in the area at this time. Borue O'Brien and his sister-in-law, Eliza, apparently operated the plantation during this period for their names appear along with Zenor's on a map of the Avoca Island area dated 1893. The plantation name is shown as "Mackey" on this document.

The O'Briens purchased Zenor's interest in the plantation in 1907 (C.O.B. QQ-36396), and three years later sold the property to J.N. Pharr and Sons, Ltd. (C.O.B. 44-38968). From that point the sequence of ownership of the tract is the same as that described previously for the levee right-of-way. The 1935 USGS topographic map shows several structures in the location of the building complex on the old McKay plantation, but none are located in the vicinity of the proposed borrow area.

Survey of the Initial Borrow Area

The results of the historical research suggested that this area had served as the location of agricultural fields for a sugar plantation. Cartographic data indicated that the building complex on the sugar plantation was located well north of the area. In fact, no documentary evidence was found which suggested that structures were ever located within the borrow area.

Intensive pedestrian survey confirmed the findings of the historical research. The only cultural features encountered within the borrow area were portions of some of the smaller drainage ditches which criss-cross the island.

CHAPTER 6: SUMMARY AND RECOMMENDATIONS

The archaeological and historical research conducted in relation to the proposed enlargement of East Atchafalaya Basin Protection Levee Item E-96 included documentation of the history of land ownership and use within the levee right-of-way and two proposed borrow areas; test excavation of a previously recorded site, 16 SMY 130, located within the levee right-of-way; and intensive surveys of the borrow areas.

Summary of Research

The Levee Right-of-Way

Site 16 SMY 130 was initially recorded as an aboriginal shell midden located at the junction of Bayou Shaffer and Bayou Boeuf. Later work at the site documented the presence of a historic component as well, but provided little information on the age or nature of the historic occupation. The present research has provided new data on both the prehistoric and historic components. No intact aboriginal shell deposits were located, but a Mississippi period component was recovered from natural levee deposits in the lower levels of Test Unit S105W13. Limited evidence of an earlier Marksville period component was also present in the mixed upper levels of the unit.

The historic occupation of the site is associated predominantly with Avoca Plantation. The plantation was established by James Nixon Wofford in the 1840s and owned by him until 1868. In 1877 it was purchased by Congressman Chester Bidwell Darrall, who retained it until 1900 when he retired from public life and moved permanently to Washington, D.C. The following year the plantation was purchased by John Newton Pharr and added to this extensive holdings in the Morgan City-Berwick area. After the elder Pharr's death in 1903 Avoca Plantation was operated by one of his sons, Eugene Albertus Pharr. The younger Pharr undertook a massive drainage project on Avoca Island which was intended to reclaim large areas of swamp and marsh. Although initially successful the project depleted the Pharr's finances and undoubtedly contributed to their bankruptcy in 1921. The losses that they suffered in the 1927 flood, which led to their sale of the plantation, were only the last of a series of reversals.

Throughout much of the plantation's history, the levee right-of-way was the location of workers' quarters and a variety of service buildings. Construction of the present levee in the 1950s impacted many of the archeological remains in this area, but at least one intact feature survived and was excavated in test unit S105W13. The feature, a well, may date as early as the middle nineteenth century and was apparently associated with workers' quarters located in this area. Other intact remains could not be located within the levee right-of-way.

The Alternate Borrow Area

The alternate borrow area was located just south of the levee right-of-way, and the history of ownership of the two areas was the same. Until the early twentieth century the borrow area was the location of agricultural fields, but in the 1910s or 20s a series of workers' quarters for Avoca Plantation were constructed there. These structures were probably occupied until the late 1920s when the plantation was sold at a Sheriff's Sale. Intensive survey of this area located the remains of at least five of the structures, but intact deposits could not be identified at any of them. They have been

recorded as localities within site 16 SMY 130, which is now considered to include the entire building complex on Avoca Plantation.

The Initial Borrow Area

The land comprising the initial borrow area was first developed as a sugar plantation in the late 1840s by Dr. R.B. McKay. In 1857 it was purchased by Dr. John A. Tarleton, and it remained in the Tarleton family until 1890. The plantation, apparently known as Mackey, was then owned by members of the O'Brien family and Oscar Zenor until 1910 when it was purchased by J. N. Pharr and Sons, Ltd. Cartographic data suggest that throughout this time the borrow area was the location of agricultural fields, and the results of the intensive survey support this conclusion.

Site Significance

16 SMY 130

The archaeological and historical data gathered during the present study indicate that site 16 SMY 130 is eligible for nomination to the National Register of Historic Places under Criterion D as set forth in 36 CFR 60: properties that have yielded, or may be likely to yield, information important in prehistory or history. The site has the potential to provide information on a variety of research topics important to this region, but two themes identified in Louisiana's Comprehensive Archaeological Plan (Smith et al. 1983:64) appear to be particularly relevant. One of these themes is plantation archaeology, and within it a number of specific research questions can be identified, including:

a) What was the spatial organization of bayou sugar plantations, and how did it change through time?

b) What are the material correlates of antebellum and postbellum social positions on sugar plantations?

c) What subsistence strategies characterized bayou sugar plantations?

The first of these questions has been examined previously by Rehder (1971:102-109) using cartographic and aerial photographic data. He identified a distinctive bayou-block plantation pattern within the present region, but did not consider the question of change through time. Archaeologists, whose data are particularly sensitive to diachronic problems, have recognized the existence of such patterns, but they have not generally considered the non-structural material aspects of them or how the patterns may have been altered over time (cf. Pearson et al. 1979 for an example of such a study on Mississippi River sugar plantations). Site 16 SMY 130, here defined to include the entire Avoca Plantation building complex and not simply the present study area, has the potential to provide significant information in this regard. Historical data are available to identify the former location and function of many of the structures on the plantation, and the present investigations have demonstrated the existence of intact features and refuse deposits containing dateable ceramics and glass at these locations. Numerous structures are known to have been situated outside of the present study area, and these can be expected to yield comparable data and to have suffered less disturbance, since they are further removed from the area of levee construction.

The second research question, that concerning the material correlates of social positions on plantations, has been considered previously by Otto (1975) on a cotton

plantation in coastal Georgia. He noted several patterns in the frequency of artifact categories (particularly ceramic types and shapes) and faunal remains that appeared to correlate with differences in social status. Similar studies on Louisiana sugar plantations have been limited in scope, but they suggest that the patterns noted by Otto may not be directly applicable here (Goodwin et al. 1984). Site 16 SMY 130 offers the potential to examine this question more thoroughly. It contains the former locations of structures associated with several positions in both antebellum and postbellum plantation society, and as indicated by the test excavations, these areas can be expected to provide intact deposits yielding a variety of artifactual data and faunal remains.

The third research question concerns subsistence strategies on bayou sugar plantations. While a variety of historical information sources on sugar plantation subsistence are available (cf. Hilliard 1972), archaeological data on this topic from Louisiana plantations are extremely limited (Goodwin et al. 1984), and none of the data come from bayou plantations. Site 16 SMY 130 provides the opportunity to gather important information on this subject. The results of the test excavations indicate that intact features containing well-preserved faunal remains are present and can be expected in association with other domestic structure locations on the site.

The second general theme on which site 16 SMY 130 can provide information is prehistoric coastal subsistence and settlement patterns. Within this theme, research questions such as the internal spatial organization of prehistoric sites in the Mississippi River deltaic plain can be examined. At present, despite excavations of a number of sites, little is known about this subject. The most obvious feature at most of these sites is a shell midden, but its relationship to former structure locations is usually not clear due in part to the difficulty of identifying post molds within it. Site 16 SMY 130 may yield important information on this topic since previous investigations there identified a thin shell stratum, and the current test excavations encountered in situ Mississippi period remains in a shell-free natural levee context. Additional shell lenses and areas of earth midden may be present in other portions of the site, and the latter may provide evidence of the former locations of structures.

Recommendations

The results of the test excavations suggest that the proposed levee construction and borrow excavation will not impact intact portions of site 16 SMY 130. Periodic monitoring of construction activities should be conducted to insure that significant resources are not being destroyed. The construction contractor should also be notified concerning the presence of the historic graves just outside of the right-of-way.

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